IMT Institute for Advanced Studies, Lucca
Lucca, Italy

CENTRAL V. LOCAL OWNERSHIP OF FIRMS

PhD Program in Economics, Markets, Institutions
XX Cycle

By
Anna Taorchini
2008

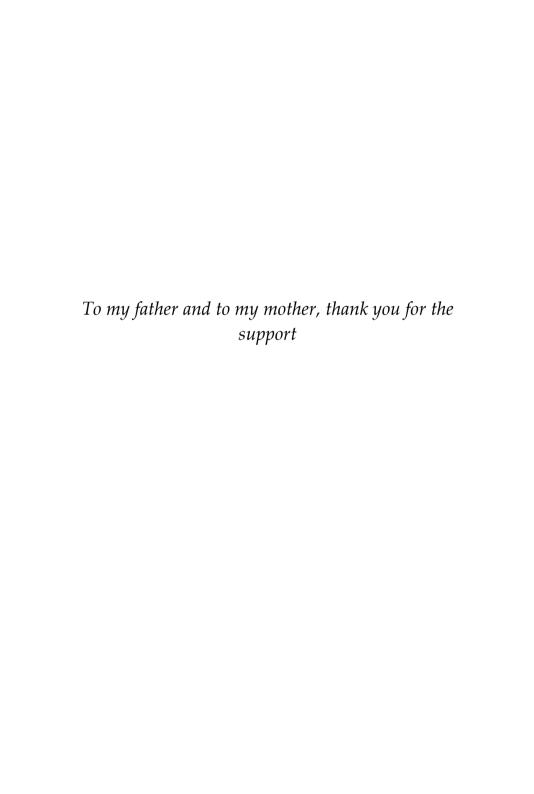**The dissertation of Anna Taorchini is approved.**

Programme Coordinator: Prof. Fabio Pammolli, Univeristy of Firenze and IMT

Supervisor: Prof. Bernardo Bortolotti, University of Torino and FEEM

Second Supervisor: Prof. Carlo Scarpa, University of Brescia and FEEM

Tutor: Prof. Carlo Cambini, University of Torino

IMT Institute for Advanced Studies, Lucca
2008

To my father and to my mother, thank you for the support

Contents

List of Tables

Other tables can be found in Appendix

Acknowledgements

I would like to thank the people with whom I have worked during these Ph.D years.

Prof. Bernardo Bortolotti and Prof. Carlo Scarpa for their suggestions, advice and supervision.

Prof. Carlo Cambini for his availability, collaboration and great friendship shown in all three years of the Ph.D. Thank you for having been my tutor.

The "FEEM" for its hospitality and for the opportunity that it has given me.

All the people who work at the FEEM for the pleasant times we've spent together.

A special thank you to Laura, Silvia and Milli.

Silvia Lucchesi, Valeria Giusti, Gaelle Le Saux, Antonella Barbuti, Elisa Scuto for their support at IMT.

And finally sincere thanks to Luca, for his support and patience, for having always believed in me and for the strength that he transmitted to me.

Vita

February 6, 1980   Born, Lucca, Italy

2004   Degree in Economics
               Final Mark: 110/110 cum lode
               University of Pisa, Pisa, Italy

2005   IMT, Institute for Advanced Studies
               Lucca, Italy

2006   FEEM, Fondazione Eni Enrico Mattei
               Milano, Itlay

Abstract

This work analyses the presence of public shareholding in limited companies in European countries.

Firms owned by public bodies (State or local authorities) can be found in many economic sectors. This type of governance stretches its influence beyond its traditional domains, including business areas in which competition is a common feature.

In recent years these companies have changed in some cases their usual governance, including private shareholders alongside public entities: companies whose ownership is shared among public and private entities are often called mixed enterprises.

The analysis not only focuses on public central ownership; it also presents and analyses the evidence of a strong local public shareholding in European enterprises.

A very demanding and time consuming part of the work has been building a unique database, which has then been studied in its different facets. This database includes more than 5,600 EU companies with public shareholders; more than 40% of them are participated by local authorities. The data analyzed were collected from the official accounts of the same companies.

The main results of the analysis can be summarized as follows.

First, the descriptive statistics have shown that public ownership, both at central and local level, is widespread in Europe. Such ownership has however different degrees of importance across industries.

Second, the analysis of the companies' financial figures has pointed out some clear differences between Western European Countries and Eastern European Countries. Despite undeniable progress, in many sectors Eastern European firms still suffer from their starting point, the weakness of the financial markets where they operate, inadequacy of the infrastructure and different degree of technological development.

In the same way, we document and test the disparities between different sectors within the same Country and between the same sectors across Countries. For example, at European level the sector with the highest profitability appears to be finance (followed by communications), while the countries with the highest profitability appear to be Luxembourg followed by Estonia and Slovakia.

A further analysis has compared the value added produced by companies where a public shareholder is present and the total value added of European regions. This has confirmed the remarkable relevance of companies with public shareholdings on the economy of the countries considered, which amounts to an average value of 4.7% of the value added, which in some regions reaches 15%.

This result remains true at the local level: enterprises with local public shareholders have a leading role in the GDP at the regional level. The Italian case, sometimes indicated as one where the public presence is pathologically high, does not stick out as something too different from what we observe in countries such as France, Germany or the Netherlands.

Significant differences were found on the tests on averages and medians, through classifying the companies in the sample by shareholder type, by sector, by geographical area and by governmental form in the local area of reference.

Finally, some regression tests were made to show that performance indicators were correlated with some enterprise characteristics – size, activity sector, shareholder type (central or local), and share percentage (total public v. partial public).

For the latter we tested whether the institutional structure of the countries to which enterprises belong (federal Countries v. non-federal Countries) and public shareholder type could influence the performance of government-owned enterprises.

1. Introduction

The debate on the public presence in the economic system goes back to the very first contributions to the analysis of economic systems, and still we cannot say it is totally settled. Supporters of a strong public presence and fans of a massive privatization of public assets are both present on the scene. The centre of our analysis is that, despite the apparent success of the privatization wave of the Nineties, in Europe the public presence in firms remains a key feature of many economies.

In many Western European countries public and private companies compete in oligopolies. This holds in almost every economic sector, including those more open to competition. Analyzing different countries one can identify market niches with a stronger public presence than that of private players. This is often the scenario referred to as "essential" products and services. Essential means that these products cannot be taken out of the market without causing a total, or partial, economic collapse (Bös, 1989).

In the scientific literature many papers explain this issue by showing that publicly owned companies can operate like regulatory tools. Such companies are often seen as the answer to a failure by private companies in reaching allocative efficiency. This means that private companies are unable to guarantee sufficiently broad access to products and services at reasonable cost.

These failures can occur for many reasons. The public production in some areas such as goods and services of public utility, can be considered the solution to such failures. A

different approach is proposed by researchers who favour privatizations. These researchers believe that the presence of public enterprises is a major cause of market inefficiencies.

Privatization is also considered a way for policy makers to reduce inefficiencies of public enterprises and the economic system in general (Boycko, Schleifer and Vishny, 1996).

The major issue between public and private enterprises is the difference in goals, as well as in the methods adopted to pursue them. In general it is believed that public enterprises focus on maximizing social welfare, with a high output level offered at a relatively low price, often equal to the marginal cost. Conversely, private companies focus on maximizing profits, with maximum efficiency, with the lowest marginal cost and with products/services offered at a price higher than the marginal cost. Although this is only a very rough representation of the behaviour of these firms, these considerations are often at the core of the policy debate.

The economic literature exhaustively treats public enterprises as an element of industrial policy. Similar attention is paid to the privatization process, as a Government strategy to reduce market inefficiencies. The same does not hold for so-called partially privatized enterprises, or mixed enterprises, which have been given relatively less attention by the theoretical (as well as empirical) literature.

Many studies end up with evidence to support a strong public presence, while others support privatizations. Both theories find some support in the results obtained by different theoretical and empirical analyses (Bös, 1988; Megginson and Netter, 2001).

For partially privatized companies, some contributions try to explain the procedure for creating them (Bös and Peters, 1988). These are the variables that the Government takes into account

during the share offer process, and the circumstances under which this form of governance can emerge instead of the other two "traditional" solutions, namely complete nationalisation and complete privatization.

However, the analysis of mixed enterprises is still incomplete. The literature fails to explain in a definite way why a partnership shareholding inside enterprises is often needed for a proper market balance. This raises a problem: mixed ownerships are pervasive in European countries, and play a significant role in several economic systems.

This analysis will give a short yet precise survey of the state of the art in the economics literature, both for public enterprises and partially privatized ones.

Afterwards, we will show that public and mixed governance structures are present in Europe, and will consider the institutional diversity of the countries analysed, as well as their presence in different industrial sectors.

Using some indices based on their accounts, we will evaluate the financial performance of these firms in the various countries and sectors. Moreover, we will show with direct inter-country analyses in which sectors public participation is more relevant, and whether this fact is associated with different levels of profitability and efficiency.

Although this work certainly cannot claim to totally fill the gaps existing in the literature, we hope that it can represent a step towards a better understanding of this area within the European Union.

The thesis is structured as follows:

The first chapter is an introduction.

The second chapter is a survey of the economic literature regarding publicly owned enterprises and mixed ones.

The third chapter includes the research topic and the sample.

The fourth chapter presents the descriptive analysis.

The fifth chapter evaluates financial and operating performance of public enterprises.

The sixth chapter analyses Italian state-owned enterprises within the European context.

The last chapter concludes.

2. Related work

2.1 Definition of public enterprise

Defining public enterprise is not immediate, since this term is often used to describe different organizations, including Government enterprises, public corporations and State owned enterprises (SOEs[1]) (Hinds, Sanchez and Schap, 2004).

The economic literature provides many definitions for "public enterprises." First of all, William G. Shepherd (1976) defines as "public" all enterprises with a certain level of public involvement in costs, control, ownership or management.

Zeckhauser and Horn (1989) claim that the distinctive features defining an enterprise as public are government ownership, production of goods and services that ultimately are distributed on a fee basis and sales revenues that have some connection to underlying costs.

Schmitz (1996) defines as public those enterprises owned and controlled by Government that perform a business activity.

Bös (1989) defines government enterprises as "…the activities of government whose operating costs are at least to a substantial extent covered by the sale of goods and service to the public".

Apart from having a precise definition for public enterprises, it must be said that not only is there a different interpretation at the literature level, but often there is a different vision of the public enterprise between countries. For instance, in France

---

[1] State-owned enterprises.

enterprises are public if the Government owns a strict share stake majority, while in Germany an enterprise is defined "public" even if the Government has minority stakes.

Despite the difficulties of giving a unique and correct definition of public enterprise, in modern Western-type economies the presence of these enterprises is usually explained in terms of their allocative, distributive and stabilization superiority with respect to private enterprises.

Allocative superiority is assessed in two aspects: the first one consists in guaranteeing the offer of public utility goods at reasonable low prices, while the second one explains the presence of public enterprises in competitive markets as means for guaranteeing the decentralization of political and economic control.

Distributive superiority resides mainly in the ability of public enterprises to offer goods, mainly those that have a high demand by lower income consumers, at lower prices to compensate low salaries.

Finally, concerning stabilization, after analysing the economic history in many countries, it can be said that public enterprises have always had a major role in economic planning. If we think of monetary political issues, the money offer can be better controlled if most of the financial sector is nationalised.

However, the primary goal of public enterprises is maximizing collective welfare. It is this distinctive feature that differentiates State owned enterprises from private enterprises, which instead maximize profits.

In order to better understand what role public enterprises play on the market today and why these enterprises are widely present in many countries the economic studies on this subject and the results obtained must be analysed.

2.2 Mixed oligopolies in competitive markets: the public enterprise as a regulatory tool

In the Western European countries there are many oligopolistic mixed markets in which at least one public enterprise competes with at least one private enterprise, exploiting only market instruments.

A mixed market can be the result of three separate regulatory acts by the Government. Indeed, it can result from a privatization or nationalisation process as well as from the entry of a private enterprise in the market.

In the first case some, not all, public enterprises on the market are later privatized with the aim of increasing productive efficiency; in the second case some private enterprises, yet not all of them, are nationalised with the aim of increasing the welfare level, while in the last third case public or private enterprises can enter a market to compete with already existing enterprises.

All these three policies are actually regulatory means that the Government can exploit. In fact, the Government decides to adopt one strategy above all depending on its the objectives (White, 1996).

Despite the fact that this market typology is widespread at the European level, it has not received much attention by the economic literature. Nonetheless, some researchers who have explained and justified the presence of public enterprises in competing markets by evaluating in which cases they could bring about positive economic results.

De Fraja e Delbono (1989) present an interesting and special model in which they demonstrate that, based on how an enterprise behaves on the market, the results can be extremely different. Their analysis disagrees with the usual literature which, given some private enterprises with sub-perfect competitive behaviour, aims at studying how far a public firm should optimally depart from the marginal cost pricing rule.

In the De Fraja Delbono model it is assumed that private enterprises have the goal of maximizing their profit while public enterprises tend to maximize collective welfare.

The hypotheses are: presence of "*n+1*" enterprises on the market, with "*n*" ones being private and only one being public. Each agent on the market has complete information and all the enterprises apply the same technology to make similar goods, with fixed positive costs, growing marginal costs and no capacity constraints.

The hypothesis of growing marginal costs is sufficient to explain the presence of a limited amount of enterprises and at the same time allows significant actions by the public enterprise.

Indeed, if the marginal cost was constant, the effect of the public enterprise would be to fix the market price equal to the marginal cost and to make a quantity of goods equal to the difference between the market demand and the quantity offered to private enterprises.

The authors highlight four possible behaviours that the public enterprise can have towards the market, with two of them representing extreme cases.

The first way of acting is the "Stackelberg" way, claiming that a public enterprise has the first move advantage and behaves as a leader. Given that its goal is maximizing the welfare, it calculates the quantity of the good to offer on the market and its price

according to the produced quantity. On these bases, it aims at maximizing the overall welfare.

The second scenario investigated is the "Nash" one, in which the public enterprise, like the private one, is a player in a simultaneous game. Competing on quantities, the first one aims at maximizing welfare, while the second ones aim at maximizing the profit.

The remaining two extreme cases are the "Entrepreneur" (egoist one) and the "Public Monopoly" one. In the former, the public enterprise behaves egoistically, maximizing the profit as if it was a private enterprise. This scenario reaches the same balance as the "Nash" scenario. In the former one all the "*n+1*" enterprises are nationalised and tend to maximize welfare.

Once these four ways of acting have been identified and explained, the authors show that the case with a higher welfare level is monopolistic behaviour, with complete nationalisation of the enterprises in the market.

This result is rather obvious considering the purpose of public enterprises, while the second result derived by the authors is less obvious.

They claim that when the market is not "too oligopolistic", when the number of enterprises in the market is close to the optimal value, aiming to maximize the welfare by the public enterprise leads to a worse situation than what would happen if it aimed at maximizing profit.

This is because the public enterprise cannot have the advantage of the action, meaning that it cannot behave with a Stackelberg behaviour. In this case, with the purpose of maximising welfare, the public enterprise is led to produce such a high quantity of goods that the other private enterprises hardly survive, because the marginal cost of the public enterprise being equal to the

market price, the welfare increase under a Nash regime would be high enough to compensate the profit losses of private enterprises.

This model presents lacks and deficiencies. It does not take into account that one of the reasons that drives the Government to privatize a public enterprise is to increase its productivity. Besides, it shows that privatization causes benefits even without reducing the production costs of the enterprise.

In further analyses, De Fraja and Delbono also exclude the possibility that a share co-participation between State and private entities in the market can be implemented, hence without considering partial privatizations. In many cases the government has usually held or even holds a non-negligible proportion of shares in privatized firms.

In the same year of De Fraja and Delbono's analysis (1989), Cremer, Marchand and Thiesse (1989), developed a model to show that a public enterprise can be used as a regulatory tool to improve resource allocation in a non-perfect competitive market.

Different from usual theory, which evaluates how much the public enterprise, in optimal terms, should not completely apply the rule that fixes the price at marginal cost, the authors evaluate whether, from a social point of view it is optimal to have public enterprises in a Cournot-oriented oligopoly.

In order to set up their model they make some basic assumptions:

- There is increasing return to scale at the firm level;

- Each public firm faces a budget constraint;

- The market output is given by a Cournot-Nash equilibrium;

- Public firms may pay a premium to the workers;
- The government anticipates the market outcome resulting from its decision to nationalise existing firms or to create a new firm.

The optimal first-best solution in the market would be to have an enterprise selling "1" at a price equal to "0". This solution is not possible for private enterprises, which could not survive.

The authors thus hypothesize that in the market there are "n" private enterprises that produce a quantity of goods equal to $\dfrac{n}{(n+1)}$ at a price equal to $\dfrac{1}{(n+1)}$

This allows the Government to regulate the market in many ways, including the possibility to nationalize one or more private companies in the market, or to allow a new public enterprise in.

According to the first criterion, the authors claim that, since public enterprises maximize welfare, nationalizing a private enterprise should have an expansive effect on output and hence a positive effect for society at large.

The authors wonder whether the positive consequences caused by nationalising a single private enterprise can derive from nationalising other enterprises. The answer is negative, because further nationalisation will force the existing public enterprise reduce its output to match its break-even constraint.

To prove this, the authors proceed by comparing the values of total surplus that can be reached when the number of public enterprises on the market changes.

In this way, the authors show that nationalising a market enterprise is always socially optimum because the total output is

maximised, not depending on fixed costs, when "*c*", the added price that the enterprise grants to employees, is not too high, in detail not above $\hat{c} = \dfrac{(n+1)}{n(n+1)}$ [2].

Conversely, the nationalisation of more enterprises by the Government would lead to a reduced total output even if this would always be greater than the one in a purely private oligopoly.

If "*c*" reaches values that are too high the enterprise nationalisation causes an output reduction. If at the same time the fixed costs are very low, any time an enterprise is nationalised total output and total surplus both increase.

This having been said, the best solution, with low fixed costs and high "*c*", would be the complete nationalisation of the enterprises on the market. That is often a non-practical policy, and enterprises are left in private hands.

Another tool that the Government can exploit is the possibility of letting a new enterprise in the market.

The purpose is now to assess, in terms of surplus, the implication of a public enterprise entering a market with already existing "*n*" private enterprises.

The major difference with respect to the nationalisation case is that creating a new enterprise adds fixed costs that will reduce the total surplus. Thus on the one hand the new enterprise increases the welfare because it is a public one; on the other hand

---

[2] "*c*" is interpreted as a transfer from public enterprises to their employees and for this reason it is not taken into consideration while calculating the total surplus.

the new enterprise reduces the welfare level due to its added fixed costs.

Comparing the surpluses that can be obtained for a new public enterprise entering the market to those obtained if no public enterprises are present, it turns out that the newly entered public enterprise is always to be preferred. The only constraint is that the fixed added costs not be too high, because the surplus produced by the "*n+1*" enterprises (1 is public) is always greater than those produced by "*n*" private enterprises.

As a final analysis, the authors compare the two strategies that can be adopted by the Government to regulate imperfections of a less than perfectly competitive market. They demonstrate that nationalisation is always positive from a social point of view, compared to the entrance of a new enterprise. This can be explained by the presence of fixed costs.

The authors reach this conclusion without considering institutional or political constraints that would make the nationalisation more problematic, hence favouring the creation of a new enterprise.

Throughout their study Cremer, Marchand and Thiesse, make the hypothesis that a greater salary granted by public enterprises to the employees through the prize "*c*", does not influence the salary value granted by private enterprises. This is actually unlikely, and in the long term it is likely that the salaries in private enterprises will increase, even without reaching the amount offered to public employees. This will have effects on the output produced by the private enterprises, which will have to reduce produced quantities, to the advantage of public enterprises with a consequent positive effect on total output because the reduction of private output will be more than compensated by the increase of the public one.

Thus, the presence of a public enterprise can be seen also as a spur to increase competition in the market, letting private enterprises abandon their break-even point at the equilibrium point. This will result in a positive effect on the total surplus.

For the authors hence the presence of a public enterprise on the market is always positive from a social point of view because its behaviour allows an increase in the overall output that will be sold on the market at lower prices.

Merrill and Schneider (1966) obtained the same result. With their analysis the authors show that the presence of a public enterprise in an oligopolistic market can cause an increase of performance represented by an increase of aggregate output linked to a price reduction.

To prove this they hypothesize a market with three different private enterprises that produce an homogeneous good without exploiting the full capacity but obtaining a profit.

The enterprises have similar costs allocations and their objective is to maximize profits. Another hypothesis is that the market is closed for new enterprises.

Private enterprises will decide to form a joint monopoly only it will be profitable. Being unable to enter the market with a new enterprise the Government can only influence the market by acquiring one of the three private enterprises.

By doing this, the Government is imposing as its objective to maximize the aggregate output while following two conditions: its actions cannot cause losses for the other private enterprises and the fixed price should not be so low as to drive excessive demand.

After the Government will have acquired a private enterprise, the demand function for the remaining enterprises will depend

on its own price policy and the sales policy of the public enterprise.

The authors identify three possible price strategies that private enterprises can adopt: a) the first one consists in permitting the Government to decide its price policy and to sell as much as possible at that price, after which private enterprise will fix the price in order to maximize profit in joint monopoly; the private price will surely be higher the one adopted by the Government; b) private enterprises will decide a lower price with respect to the Government one, and will sell as much as the market can accept or they manage to produce; c) an equal price will be established for private and public enterprises and the market will be divided according to this price, this policy being defined as *cooperative*.

Another hypothesis suggested by the authors is that the Government adopt a neutral price policy, meaning that the demand elasticity of private enterprises is equal to that observed before the Government actions. However, it will fix the price.

Despite any price policy adopted by private enterprises, the price imposed by the Government will always be lower than the one adopted before the enterprise nationalisation. This will cause an increase in aggregate output and a reduction of private profit.

If output and profit functions of private enterprises depend on the price imposed by the Government, then the price policy of private ones will also be affected. If the Government chooses a high price it will be more profitable for private enterprises to follow the "b" price policy; for lower price values it will be better to adopt policy "a". Given that the Government is aware that private enterprises aim at maximizing profit, can choose price values in order to make private ones shift between these two policies, this is a regulatory element for the market.

Furthermore, the Government can influence the market by deciding the size of the public enterprise: it can establish how large the public enterprise must be so that the market works at full capacity. Since the authors imposed the hypothesis that before Government actions enterprises were not working at full capacity, the goal of the Government is to force the market price to a level that achieves full capacity. Only when the Government uses a discriminatory sales policy is the optimum price fixed by private companies influenced by the public company size. In that case the Government should choose a capacity level so that the price adopted by private entities to maximize profit in the joint monopoly corresponds to the one that leads to full capacity.

Harris and Wiens (1980) focus their analysis on the possibility that a public enterprise can be used to promote "static economic efficiency" in a market. Looking at the oligopolistic market the decisions taken by the public enterprise influence the profits of private enterprises.

To prove this the authors imagine an enterprise that makes homogeneous goods, within a public enterprise with a dominant position. The public enterprise has the first move, it decides the production level and afterwards the private enterprise makes its choice. The goal of the public enterprise is to cancel the productive gap that could exist if, because of high entrance barriers in the market, the private enterprises make profits by under-producing the optimal value, and the optimal production level that could be reached if the market price was equal to the marginal cost. Since the public enterprise has the advantage of the first move and the private enterprise will decide according to its actions, all private enterprises will reach the output level that ensures a price equal to the marginal cost. The authors claim that "the primary function of the public enterprise is to fix the

optimal level for the industry, while private enterprises choose the optimal distribution of production among them".

Different results are obtained if we hypothesize incomplete information, with no enterprise, including the public one, having information on the cost function of the other enterprises.

Every enterprise on the market has full knowledge of its own cost function, of market demand and of the reaction function of public enterprise. In this case the public enterprise disseminates to private ones its reaction function in terms of output, and, in line with previous concepts private enterprises will choose their production level, as will the public enterprises. Thus the market is balanced. Afterwards the public enterprise can change the aggregate output level, increasing it if the marginal cost is lower than the price adopted by the private ones, or it can keep it steady if the price is equal to the marginal cost.

The adjustment procedure continues if no private enterprise understands the strategy of the public enterprise and the market tends to implement the optimal welfare. Conversely, if private enterprises understand the Government policy, they are led at any moment to produce less than planned, with higher market prices. This will drive the Government to increase production, increasing its marginal costs. Hence the aggregate output will be reduced and prices will increase.

In a recent study by Cornes and Sepahvand (2005), the authors analyse possible distortions in an international oligopolistic market. The public enterprise presence can be a regulatory element or a further distorting element.

According to the authors, if the market were perfectly competitive and if complete information was possible, enterprise ownership would not be relevant. If total information were guaranteed but markets were not competitive, the public

enterprise would be the best element to minimize market failures and to obtain social goals. If the market were competitive but the information incomplete, the private enterprises would ensure a higher efficiency level (Megginson and Netter, 2001).

The authors of this paper intend to prove that decisions taken by public enterprise can be a distorting factor, in a Cournot competition, or a regulatory element in a Stackelberg scenario.

What differs in this analysis is the market structure. It is considered an international oligopolistic system, with the presence of a foreign private enterprise.

The initial hypotheses is that domestic enterprises produce and offer only in their market, while foreign enterprise can also export and offer goods in the market under examination.

A further difference between the above analyses is that each enterprise, including the foreign one, has a market power in the domestic market (with "n" being at a low value). In the domestic country, the economic policy has an import tax and supports internal production.

Given these initial conditions the authors assess whether the introduction of a domestic public enterprise increases already existing distortions.

Their model is a two staged one. In the first stage the Government announces its the political tools, such as tariffs and aids. In the second stage each enterprise, domestic and foreign, plans its production level in order to maximize profit. The equilibrium reached will depend on the economic polices taken during the first stage.

Afterwards, the authors add a public enterprise in the domestic market, and suppose that it can make the first move. Thus, at the first stage the Government decides aids and tariffs and at the

same time fixes the production level of the public enterprise to maximize domestic welfare. In the second stage, in line with the tariffs and aids, the private enterprises choose their production level to maximize profit.

In this context the authors claim that the presence of public enterprise in the market does not increase distortions because having guaranteed the first move advantage and behaving in the Stackelberg way, it will fix the price at the marginal cost. If it is forced to act at the same time as private enterprises adopting a Cournot behaviour at the second stage, the public enterprise will add further distortions in the market.

The authors' next objective is to evaluate the importance of preferences on timing the enterprises' actions in the market.

With this study they significantly refine previous studies (De Fraja and Delbono, 1989) claiming that privatizing public enterprises is correct only if the market is highly competitive. In this model they prove that the timing of the actions is a key factor to decide the best strategy to adopt, at any competition level.

Introducing preferences on the timing of actions means that the enterprise can act immediately, anticipating other competitors, without being aware of their moves, or waiting to see how they will behave and acting consequentially.

In the same scenario with three enterprises - private and public domestic, and private foreign - they identify different results according to the move decisions of the enterprises.

Accepting the immediate move of the public enterprise and the later one of the foreigner, it can be observed that the timing decisions of the private domestic enterprise are not important because whenever it moves, the domestic equilibrium is not altered and the output quantity by each domestic enterprise in

the same. The only element that can lead the private domestic enterprise to act afterwards is the possibility of increasing Government aids. In the same way the simultaneous later moves never lead to equilibrium because the foreign enterprise will always be better off by acting after the domestic enterprises because its profit decreases as output quantities increase.

With this model, the authors prove that it is not the public enterprise that increases market distortions, but rather the timing of its actions.

The studies and models analyzed justify the presence of public enterprises in some market sectors.

As the authors in these papers have proven, often public enterprises play a key role because they are a State means for regulating specific and important economic sectors, while reducing major market distortions.

Supporters of public enterprises as tools for industrial policy do not look at these entities as a source of inefficiencies or market failures; rather they look at their regulatory role.

The only problem that can be observed in the above models is in the assumptions, often restrictive and little consistent with the real world, starting from which the authors derive their analyses. For instance, the authors imagine marginal cost functions constant or zero normalized, linear demand functions, or an excessive quantity of enterprises in the market. Such assumptions, though rather strict, do not invalidate the obtained results and analyses.

However, in economics, counterpoised to theories supporting public enterprises, there are theories supporting privatizations that lead to different conclusions, identifying public enterprises as key factors for market inefficiencies.

For a broader analysis, it is necessary to also include these latter theories.

2.3 Privatization and partial privatization: two alternative government strategies

In recent economic literature privatising public enterprises has had major relevance.

This economic process can be defined as transfer of ownership rights from the public to private sector. It represents a qualifying element of a package of policies including liberalization, deregulation and corporate governance reform.

It should be noted that privatization is a political process as well as an economic process.

"Privatization is the reallocation of control rights over employment from politicians to managers and the increase in cash flow ownership of managers and private investors" (Boycko, Shleifer and Vishny, 1996).

Privatization changes the distribution of power within a society, as it diminishes control by the State and Government, appointing managers.

In the broadest sense, however, privatization is associated with the shift of activities from the state to private sectors (deregulation and liberalisation), as well as the shifting of production from public to private hands. In a narrow sense, instead, privatization is only the result of changes in ownership from the state to private investors: individual investors, institutional investors or other privately held companies. These

changes are characterised by several features. Some of the most important ones are structure, namely, the number of shareholders which own the privatized SOEs, separation between ownership and management, turnover in top management, the nature of incentives conceded to management and, finally, the organizational structure of the privatized SOEs.

According to major economic literature, privatising a public enterprise increases the efficiency level. Indeed, according to Sheshinski and Lòpez-Calva (2003) the aim of the privatization program is to achieve higher microeconomic efficiency and foster economic growth, as well as reduce sector borrowing requirements through the elimination of unnecessary subsidies.

The validity of the privatization process is not questioned in highly competitive markets (Megginson and Netter, 2001). Many studies support the theory that private enterprises are better than public ones in terms of efficiency and profitability.

Hart, Shleifer and Vishny (1997) developed a model to prove the higher potential of private enterprises compared to public ones in producing at a reduced cost and with better quality, especially with incomplete contracts. D'Souza and Megginson (1999), Dewenter and Malatesta (2000), Bortolotti, D'Souza, Fantini and Megginson (2001) through sampling analyses, analyse the operational and financial performance of enterprises before and after the privatization process. Results show an increase of output level, of operational efficiency and of capital investment spending.

This is due to clearer corporate and managerial goals, harder budget constraints, more intense monitoring by shareholders than by politicians, more competitive and efficient markets for corporate and managerial control.

The privatization process is not simple. It can take much time and require different methodologies.

In addition, Governments are not always willing to adopt privatization as an economic tool, especially for enterprises in fundamental sectors. Even if the process is adopted, they do not always release enterprise control at the same time that they sell the property rights. Bortolotti and Faccio (2004) treat this topic, referring to it as "reluctant privatization". Governments are reluctant to give away property rights together with control rights. Their analysis shows that many times the Government, at the end of the privatization process, remains as the enterprise's ultimate owner.

Passing from a public enterprise governance to a private is preferred as it reduces bureaucracy costs of publicly owned enterprises, yet at the same time it is not be preferred at a collective level. Indeed private enterprises lack the primary goal of public ones, the maximization of social welfare, offering output at the optimum level at the lowest price.

Implementing both objectives is almost impossible even if some authors consider "partial privatization" a middle-of-the-road solution to the trade-off between gains from efficiency increases and losses in total welfare.

2.4 Partial privatization: an intermediate tool between full privatization and full nationalization

In economics, especially in recent years, there are not only the two extreme approaches of ownership structure (fully public enterprises or fully private enterprises). Since the privatization process can also happen through selling public share stakes to private subjects, via direct sales[3], share issue privatizations[4] and mass or voucher privatization[5], any possible shareholding scheme can be implemented. They can also be effective for accomplishing Government objectives.

"Partial privatization is the main instrument to cope with the trade-off between bureaucratic red tape and monopolistic pricing" (Bös and Peters, 1988).

Even if few studies have investigated partial privatization, or mixed property enterprises, some authors have made a contribution to better define these entities, assessing their market behaviour and performance level[6].

---

[3] Direct sale to strategic investors is a transfer of ownership and control to private investors whose expertise should guarantee an enterprise's successful performance in a competitive environment. This transfer can be done either through competitive bidding or a privately negotiated deal.

[4] Some or all of government's stake in an SOE is sold to investors through a public share offering.

[5] A substantial portion of an economy's public assets is transferred to a large group of private buyers. This is generally done through public distribution of shares to citizens, either for free or for a minimum charge.

[6] One of the few studies that analyses public, private and mixed enterprises is Boardman and Vining (1989). The authors use empirical analysis to analyse performances of three separate ownership schemes, showing that in terms of technical efficiency mixed enterprises have a slightly higher performance.

Bös and Peters, (1988) developed a theory to prove how the Government decides to keep its own representatives in the enterprise and how it decides to sell its stakes to private subjects.

Indeed, Government in deciding the privatization goals does not take into account only the price policy to be followed by the privatized enterprise. It also has to evaluate any possible further consequence of the privatization process, concerning individual incomes and its own budget.

Partial enterprise privatization has economic effects on private shareholders' wealth, some positive related to share dividends, and some negative related to increased prices for the good or service provided by the enterprise. Also, the Government budget is affected, as it keeps receiving share dividends related to the remaining shares, which could increase because of higher efficiency.

For Bös and Peters the board of a partially privatized enterprise includes both private investors and Government representatives. These subjects have different objectives: the former ones chase profit, the latter one maximize output at low price. In order to be a valid market regulator, the two parts must coordinate their interests, in order to reach the "*profit-benefit frontier*," a situation in which each participant has no interest in altering the achieved agreement. Clearly, the ability to influence the decision process by a subject depends on the extent of privatization chosen for the enterprise.

The authors develop a very complex model in which they hypothesize the presence of three subjects, each playing a key role in the whole process.

Inside the enterprise the *board* chooses the input and output level of production and its price. The *technological management* must decide the control input needed by the enterprise. The function

of the technological management is to perform internal controls. Once the control input is chosen, the board is notified and it plans production. The third subject is the *privatization body*, external to the enterprise, whose purpose is to design the privatization (the amount of shares to be offered). In order to do this the privatization body considers a profit level, a sort of compromise that depends on the power of public and private partners. This increases with the privatization size, because profit is the major goal for individuals in the enterprise.

Thus, the task of the privatization body is to identify the proper level of shares to be sold on the market so as to counterbalance control cost reductions and higher profit. The Government will sell share stakes until it observes that the control cost reduction has higher effects than the increased profit. The process will finish when the two values are equal or when all shares are sold.

Control costs savings can be used to increase Government and enterprise benefits. To some extent, in the case of partial privatization, Government and enterprise goals are similar.

The economic reason for what has been stated above is that cost reductions inside the enterprise cause increased productivity, which later leads to benefits for public and private shareholders. Government can accept a profit increase as long as there is an increase in the social benefits too. Indeed, increased productivity can be used to produce at lower costs, and hence to sell at lower prices. In this way, profits increase thanks to cost reductions, and benefits increase due to price reductions. This holds until private board members become too powerful, surpassing the optimum level of the privatization. Beyond the optimum level, profit maximization becomes more important, and the Government would better stop selling share stakes to the market.

Actually, Government can hardly understand the optimum control level in the enterprise. This makes it almost impossible to identify the optimum extension of privatization that allows public and private benefits to be achieved together. For this reason, it is more likely to have entirely public enterprises or entirely private enterprises.

Like Bös and Peters, Matsumura (1998) analyzes the optimum level of shares within the market that the Government must maintain in an enterprise to be privatized. The basic assumption is that the enterprise wants to maximize a weighted mean of the Government goals and its own profit. The weight depends on the share stakes held by the Government, from the extent of privatization.

In developing the model, Matsumura hypothesizes two enterprises in the market, one fully public and one fully private, that are producing the same goods. "S" is the shares part kept by the Government in the partially privatized enterprise. "α" is the weight of the Government payoff on the goal function of the privatized enterprise. By hypothesis "α" depends on "s".[7]

Other fundamental hypotheses are that the market ensures complete information and the participation level "s," established externally, is known to both enterprises (thus also "α" is well known). Each enterprise has the goal of maximizing its own utility with respect to the quantity of goods produced, given the quantities produced by the competing enterprise.

The author claims that if the Government respects consumer surplus at least as highly as profits, it has more incentive to increase the output level against the private sector. Based on this

---

[7] This means that if the enterprise is fully privatised "$s=0$" and "$\alpha=0$", and if the enterprise is fully nationalised "$s=1$" and "$\alpha=1$". This also means that Government can influence "α" according to its shareholding in the enterprise.

assumption, the optimum output level by the privatized enterprise results in an increase in "α". Since the enterprise reaction function is inversely correlated to the output of the competing enterprise, the optimum level for the private enterprise decreases as "α" increases. This is due to the aggressive behaviour of the partially privatized enterprise.

Finally, the author wants to prove that full privatization is never optimal, while full nationalisation is optimal only if the market has high entrance barriers. Thus, the best solution for the market is achieved when the Government keeps a certain amount of shares of the partially privatized enterprise.

As parameters "s" and "α" are correlated by hypothesis, in the case of full nationalisation the enterprise maximizes welfare, offering goods on the market with a price equal to the marginal cost. A small reduction of output has no consequences on the welfare ($\delta W / \delta x_1$ = p - c_1' = 0)[8]. The private enterprise at the same time will maximize profit and thus determine a price higher than the marginal cost.

Higher output will cause a welfare increase

($\delta W / \delta x_2$ = p − c_2' > 0)[9]. Given that the output level of the private enterprise is indirectly correlated to the value "α", a reduction of "α" below one causes a welfare increase. The transition from a fully public enterprise to a partially private one hence has positive effects at the social level.

---

[8] x_1 : quantities produced by the public enterprise; c_1' is its marginal cost.

[9] x_2 : quantities produced by the private enterprise, c_2' is its marginal cost.

Actually, the conclusions derived by the author do not consider the benefits of full privatization nor the benefits obtained by nationalizing both enterprises. This latter contrasts with Merrill and Schneider's (1966) theory, which states that the most efficient output level is accomplished with full nationalisation. This is explained using economic and political analyses claiming that nationalisation of a whole sector of the economy would not be recommended. For this reason it is meaningful to speak of mixed oligopolistic markets.

2.5 Partial privatization in a differentiated mixed oligopoly

Previous analyses of partial privatizations have explained how the Government decides to partially privatize State owned enterprises, what considerations determine whether it is convenient or not to keep all the share stakes in public hands, or whether a part should be sold to private subjects. Such analyses about enterprise behaviour on the market and their interactions with other entities have been little investigated.

Related economic literature has not entirely proven the effectiveness of mixed enterprises. Little attention is granted to the various market structures, because they are often considered simple markets, markets with homogeneous products. However, more recent studies highlight some aspects not treated before.

Claude and Hindriks (2005) try to show the role and behaviour of partially privatized enterprises on the market. Their objective, similar to previous authors, is to assess the behaviour of public enterprises whose goal is not only collective welfare

maximization, but are also profit driven. The authors assume that public enterprises maximize a function of welfare and profit. They represent the privatization extension as the weight that the enterprise will grant to profit.

The authors want to prove that inside markets, the intermediate solution of mixed enterprises is often preferable to full privatization and full public control. This is because one consequence of privatization in an oligopolistic market is the reduction of allocative efficiency. Privatization creates an oligopolistic revenue due to output reduction and related price increases. Such a reduction is counterbalanced by an increase in productive efficiency. Thus privatizing turns out to be a valid market strategy in that the gain in productive efficiency is higher than the loss in allocative efficiency.

We know that public enterprises are market oriented, and that their primary objective is to optimize output. In this scenario such an enterprise is lead to overproduce, with higher marginal costs and productive inefficiency.

In order to prove that partially privatized enterprises are preferable, the authors develop a model which hypothesizes differences in production costs, with public enterprises having higher marginal costs than private ones, and introducing product differences.

This latter is the innovative aspect with respect to previous studies. The authors emphasize that the effectiveness of the Government decision to sell part of shares is related to the type of product, and therefore to consumer preferences.

Considering production costs inequalities, clearly partial privatization has a positive effect at a social level because it more efficiently exploits production by private enterprises. The analysis of differentiated production is more complex because it

must take into account welfare reduction caused by lower output after the partial privatization and gain obtained by diversifying products on the market.

According to the authors, the optimal privatization level depends on the products' features, whether they are substituted or complementary, and whether the type of competition adopted is price or quantity based.

For simplicity, Claude and Hindriks develop a dualistic model in which they hypothesize that marginal cost is zero normalized. They analyse two types of competition: Cournot-Nash (price competition) and Bertrand-Nash (quantity competition).

Move timings are the same in both games: in the first stage privatization extension is decided; in the second stage competition takes place.

The authors hypothesize that in Cournot-Nash competition the private enterprise chooses a production level that maximizes profit given the quantities produced by the other enterprise. The public enterprise decides the output level in order to maximize the mixed objective function, which is always chosen according to private enterprise output.

The difference between the optimal levels identified with the model shows that the public enterprise will produce a higher output than the private enterprise, with a higher profit and with substitute products. The same solution applies if the public enterprise is partially privatized. With a quantity competition the partial privatization is optimal in the case of substitute products.

Conversely, with a Bertrand-Nash competition the model leads to opposite results: partial privatization of the public enterprise is optimal if products are complementary.

The economic rationale is that under each competition type, the public enterprise that wants to maximize welfare increases output and produces goods at a lower price. If the goods produced by the two enterprises, private and public, are imperfect substitutes, in the case of quantity competition, the public enterprise privatization causes an output reduction. However, since goods can be substituted, the private enterprise will increase output, offering goods at a higher than marginal cost.

According to the authors, the excessive public output that may occur if there is no partial privatization intervention, the output reduction due to the adopted strategy have a second-order effect on the market, while private output increase is a first-order effect. Thus partial privatization has a positive effect on welfare.

Conversely, in a Cournot-Nash competition, partial privatization makes the public enterprise fix higher prices. Since by hypothesis prices are complementary, the private enterprise will also behave in a similar way. In this case privatization is harmful for the economy because it causes reduced output and increased prices.

Another recent analysis on a differentiated mixed oligopoly model is that of Fujiwara (2007).

Beginning with the statements of the preceding scholars (Matsumura 1998), what he wants to demonstrate is whether partially privatized enterprises can be the best ownership structure on the market

As already stated, Fujiwara also considers markets where goods may be partially differentiated. Furthermore, his analysis is separated into brief and long term. According to the author the time distinction is needed because it can influence consumer preferences.

His model is based on several assumptions: the presence of two goods on the market, one homogenous and one differentiated, both produced with a single basic input, labour, which is considered fully employed and supplied without elasticity. Every work unit produces one unit of goods. The quantity of work used to produce the homogenous good is normalized to one, as is the wage rate. In the market, "*n+1*" enterprises are present that produce differentiated goods, of which "*n*" products of private enterprises and "0" of public enterprises. The innovative element consists in introducing the degree to which goods can be substituted, identified by the parameter "γ"[10]. Furthermore, every enterprise has the same technology, expressed with marginal costs and fixed constants.

The partially privatized enterprise, as in preceding models, maximizes an objective function made up of profit and social welfare. The extent of privatization is identified in terms of the profit weight. The private enterprise maximizes its own profit. Resolving the objective functions of the two enterprise types on the basis of quantity produced, optimal production levels are identified according to the Cournot-Nash equilibrium. These values depend on the extent of privatization. Deriving them in terms of this level, one can understand the consequences this has. The quantity offered by the public enterprise is inversely correlated to the extent of privatization; the opposite is seen for private enterprises.

In a short-term analysis, hypothesizing barriers to entering and exiting the oligopoly, welfare maximization by Government corresponds to an optimum value for the degree of privatization, which is non-monotonic in the degree of "γ" and monotonically increasing in "*n*". Thus the more private enterprises on the

---

[10] γ represents the degree to which goods can be substituted for each other and β represents the extreme case when the goods return to being homogenous.

market - that is, as a market becomes more competitive – the more shares Government should sell to private individuals.

When the differentiated goods become totally independent, "γ"= 0 (no level of substitutability), or become homogenous, "γ" tending to the extreme value "β", the best choice for the Government is total nationalization. This statement is true because in the first case the extension of privatization is 0, so the market assumes the form of a monopoly in which the price of goods is equal to the marginal cost - a socially efficient solution. In the opposite case nationalization would still be the optimal solution, considering the assumption of symmetrical costs among the enterprises.

All the intermediate solutions - that is, of partial privatization leading to increased production for private enterprises and reduced production for public ones - can have both positive and negative effects on the total surplus. Therefore, according to the author the optimum level of privatization occurs at the value that annuls these two opposite effects.

In a long-term analysis, on the other hand, the possibility of entering and exiting the market is hypothesized. The profits of all private enterprises move toward 0. Therefore, the number of private enterprises in the market is decided in an endogenous way.

Based on the type of analysis made in the previous case, the author demonstrates that the optimum extent of privatization depends on the degree of goods substitutability - that is, decreasing in "γ". Therefore, the Government maintains the minimum level of shares within the enterprise, corresponding to the minimum value of "γ". The different long-term result achieved depends precisely on the hypothesis on which this is

based – that is, on the possibility of new enterprises entering the market.

If goods tend to homogeneity it is preferable to have the public enterprise on the market, which fixes the price at marginal cost, in this way discouraging new enterprises from entering the market because it is not profitable. If, on the other hand, the degree of goods substitutability tends toward 0, the optimal choice is the highest level of privatization possible. In this case, however, with a positive relationship between level of privatization and number of private enterprises on the market, on the one hand privatization can have a notable positive effect in the greater product differentiation on the market; on the other hand it can have a negative effect due to the excessive number of private enterprises in the market, which could lead to reduced social welfare. The optimum level of privatization is that at which positive and negative effects compensate.

These two papers allow us to hypothesize that when differentiated goods which are interchangeable or complementary are present on the market, the behavior of public and private enterprises tends to change, with one responding to the operating choices of the other.

In this case, therefore, the optimum level of partial privatization is tied to the particular characteristics of the goods as well as to the type of competition adopted. In certain cases this will result in a strategy that can achieve positive results. At other times, this will lead to negative consequences. It will be more advantageous socially to maintain the enterprise totally in Government hands.

Up to this point company ownership has been evaluated exclusively in terms of economics. For a complete analysis partial privatization should be analysed as an economic policy tool which the Government has at its disposal for resolving two kinds

of problems: the presence of incomplete contracts and Government's credibility and commitment.

2.6 Partial privatization and imperfect information

Many of the studies analysed up to now, in order to impose their own analytic models, have assumed that in the market there was perfect and complete information on both sides - specifically, an enterprise's manager on the one hand and Government on the other.

In reality, however, we know that having perfect information is almost impossible.

The theory of incomplete contracts derives precisely from the idea that in the real world it is very difficult to hypothesize perfect information. Therefore, it is impossible for the Government which controls privatized enterprises to engage in an effective commitment to a certain policy over privatized enterprises. According to Grossman and Hart (1986), given that only incomplete contracts are conceivable, ownership dramatically affects enterprise performance and efficiency.

Many scholars, basing their own theory precisely on the theory of incomplete contracts, justify privatization as the only Government instrument capable of overcoming the information gap that exists between the private owner and the Government itself; Laffont and Tirole (1991), Shleifer and Vishny (1994) and Schmidt (1996).

These authors demonstrate that the ownership of a enterprise producing public goods is fundamental, because this in itself determines the residual control rights, which represent the basis for determining a enterprise's possible future strategy. Through their own models, these authors show privatization as a possible market strategy for dealing with the problem of incomplete information. At the same time they emphasize that this policy is not always optimal on the social level. Schmidt (1996) demonstrates that it is not clear, in absolute terms, whether privatization functions to the advantage of social welfare, that is, if it allows pursuit of social benefits, in addition to strictly legal ones tied to increased profit - or if instead it only moves in the latter direction. Shleifer and Vishny (1994), on the other hand, demonstrate that a public enterprise may not be an adequate instrument for operating efficiently in the presence of incomplete contracts and corruption.

Hart, Schleifer and Vishny (1997) have a different point of view. Using a model centred on the incompleteness of contracts, they show that privatization is the only possible alternative to public ownership, because it permits the enterprise to obtain benefits both in terms of increased quality and reduced costs.

Beginning with these studies and the results achieved, and always hypothesizing imperfect information, which means the existence of incomplete contracts, Schmitz (2000), on the other hand, sustains that privatization is not the only alternative to public ownership. He does not deny the possibility of partial privatization. In this case, in order for innovative measures (increased quality or reduced costs) to be adopted within the enterprise, managers and Government have to reach an agreement giving both veto powers. The author's objective is to

show that in the case of incomplete information, partial privatization is always the best solution for both public and private ownership.

Comparing the three different ownership structures, it can be seen that: a totally public enterprise will be led to over-invest to increase quality and under-invest to reduce production costs; for a totally private enterprise the exact opposite will occur; while in the case of partial privatization the investment level for both interventions will be lower. Therefore, the justification for joint ownership being optimal is that incentives for investment will always be fewer compared to cases of single ownership. This is positive because it prevents the possibility of over-investment.

Schmitz's model subdivides the analysis into two scenarios, the first in which only the private enterprise manager invests and the second in which both manager and Government make decisions regarding the investment level. The incomplete information in this model is represented by the possibility of concluding complete contracts only in the third phase of the game, and the impossibility of knowing the amount of effort used for the decision to innovate.

In the model, three different subjects exist: manager, Government and partially privatized enterprise. The game is developed in three phases. In the first phase, the decision about enterprise ownership structure is made. In the second phase the amount of investments to increase quality or reduce production costs is decided. In the third, negotiation is based on decisions made regarding quality or cost innovations. Control rights in this game are fundamental. In the case of public ownership the Government should decide which type of innovation to pursue. Since innovation in terms of quality can lead to improved

benefits, it will choose this option. In the case of privatization, on the other hand, the manager makes decisions and therefore will choose the opposite solution from Government's. The manager will decide to invest to reduce production costs. Finally, in the case of partial privatization the parties should negotiate among themselves to identify the optimum combination of investments. Hypothesizing that the parties are symmetrically informed, these will arrive at the Nash bargaining solution.

If the manager makes decisions on both levels of investment, in the first scenario the model shows that public ownership is never optimal because the manager perceives Government's intention of increasing its quality level without, however, compensating for the increased costs following the choice of innovation carried out. Therefore, the manager, anticipating this behaviour, makes no effort to support the increase in quality.

In the case of privatization, on the other hand, the owner would have so many incentives to reduce costs that this would also lead to reduced quality.

The optimal solution, therefore, is total privatization, because Government can oppose cost reductions proposed by the manager that would lead to reduced quality.

In the second scenario, if the manager can invest to reduce costs and the Government can invest to improve quality, in the case of public ownership the Government will invest to increase quality without re-negotiating and without taking into consideration the increased costs that this decision will bring to the manager. So it will establish a higher than optimum level of investment. In the case of privatization, on the other hand, the investment level chosen by the Government will be less than optimum value

because it will be chosen only through negotiation with the manger. In the case of partial privatization, finally, both Government investment and manager effort will be less than optimal value and will be precisely equal - the first to the value reached in the case of privatization, the second to the value reached in the case of public enterprise.

In this second scenario, therefore, all three ownership structures can turn out to be optimal. If innovation in quality leads to excessive cost increase, the private structure is better. If excessive cost reduction leads to a significant reduction in quality, public ownership is best. On the other hand, if these two contrasting effects are substantial, partial privatization will be the best solution because it avoids possible over-investments.

With this model the author tries to justify why partial privatization turns out to be the best solution in social terms in the case of imperfect information, expressible in the impossibility of concluding complete contracts. The entire model is based on the fundamental characteristics of joint ownership. With both private and public subjects present within the enterprise itself to decide about policies to adopt, these two will inevitably have to negotiate. This will surely lead to an intermediate solution between what public and private ownership would pursue separately.

2.7 Credibility and commitment

As has already been stated in the preceding sections, privatization of a public enterprise consists in transferring residual income and control to private investors. This transfer leads to a reduction in redistribution but an increase in incentives. However, if on the one hand total privatization should be desirable precisely because of the increase in incentives, on the other hand it could be interpreted as a means by which Government captures the full increase in the enterprise's value.

The positive results of privatization are thus often jeopardised by unclear Government behaviour. The Government, in fact, often does not give guarantees about the coherence of its own future behaviour. The Government may use its regulatory powers to interfere in the enterprise's activities, e.g. by means of a in corporate tax increase or by re-nationalising the company (Bortolotti and Siniscalco, 2004). This could affect the decisions of stakeholders and therefore bias any privatization operation's success.

To justify this phenomenon, Perotti (1995) develops a model in which he explains the Government's behaviour during a privatization process. If the enterprise is publicly owned "the Government is unable to commit to a policy" because it will redistribute the value to anybody exerting pressure on it, independently of the effort made. If on the other hand the enterprise is private, the Government cannot interfere seriously, because a portion of control rights is in private hands. These latter may be used by the private owner to halt the Government's capacity to interfere in the enterprises' behaviour. In this sense it

is possible to assert that privatization can ensure commitment by the Government to keep its policy unchanged. Under privatization, property rights assume a residual role compared to contractual entitlements. Namely, privatization can reduce public interference over the enterprise. According to the author, therefore, privatization of a public enterprise can be an instrument used by the Government to give a guarantee of its future behaviour.

However, this is not always true, but depends on the amount of shares which the Government decides to offer on the market.

The paper shows how the structure of selling shares on the market can be used as a form of guarantee for investors. A partial sale of shares demonstrates future availability by the Government, of its willingness to support possible risks.

In his model, Perotti compares two different types of Government: a committed Government which may resist rent redistribution after the sale of shares or a populist Government which interferes after the sale.

Perotti begins with a basic premise, which is that even with a partial sale of shares the Government transfers control to private individuals; thus it is unable to directly influence the allocation of enterprise surplus.

The main difference between the two types of Government lies in their different ways of maximizing their own earnings. The populist Government maximizes a function given by the percentage of shares sold in the first period from the remaining shares sold in the second, from the dividends obtained in the first period plus the redistribution of value. The committed Government, on the other hand, has no profits from redistribution. Hypothesizing that the enterprise's production comes about due to the managers' efforts, in the case of public

ownership profits are "0" because managers will have no incentive to practice any level of effort, while with private control profits are a growing function of the managers' efforts. The effort is hypothesized to be dependent on the amount of shares sold and the type of Government. This having been said, Perotti's model shows that, whatever the type of Government, in the case of symmetrical information about political preferences, the enterprise' value is maximized in relationship to the total shares sold.

Without equally accessible information about these kinds of preferences, a committed Government will choose not to interfere, while a populist Government will decide to reallocate part of the rents. Both Governments maximize their surplus from the sale but, in this model, both profits and share prices are functions of beliefs and so, in this case, full privatization may not be optimal.

A small initial sale is a very strong signal of the willingness to redistribute future costs resulting from the enterprise's activity. A committed Government understands this aspect and, knowing that policy will not change, it will sell a small initial stake while populist Government will continue to prefer an immediate entire sale. According to Perotti, an equilibrium value exists which signals commitment. A committed Government sells this equilibrium stake, while a populist Government continues through the process and sells total capital.

The analysis carried out thus far is based on the assumption that for every quantity of stake sold the corresponding control is also transferred. A more realistic circumstance is that with a small sale control is not relinquished, and so to transfer this control it is necessary to sell the major part of the stake. This last consideration highlights another problem: if it is necessary to sell most of the stake how can Government appear committed? To

resolve this problem Perotti highlights another instrument to privatize enterprises. He detects in the under-pricing the better way to achieve the same results of privatization. In fact this strategic instrument allows the committed Government to sell the first shares at a discounted price, without appearing impatient for future profits. The Government accepts lower proceeds because this immediately signals its commitment. So it is sure to obtain future privatization's benefits. On the other hand, the populist Government will sell total capital at market price because it does not accept earning lower profits, being aware that its future economic benefits will never materialize due to a lack of commitment.

With his model Perotti offers a fundamental contribution to the subject of partial privatization. In this paper partial privatization is interpreted as an instrument used by Government to give guarantees to possible investors, that is, as a necessary phase for obtaining the benefits of privatization. The partial sale of shares, and therefore a period of shared ownership within enterprises, can thus be a valid testimony to the future behaviour of Government.

2.8 Conclusions

The literature analysis carried out up to this point has given us a fairly complete view of the role and behaviour of public enterprises on the market. It has also allowed us to consider under which circumstances the Government has an interest in selling part of their own shares to private investors and, therefore, what the behaviour of mixed shared enterprises within oligopolistic markets would be.

As has already been stated, however, the literature presents many gaps regarding the "economic" role of joint ownerships within the market, why these are an appropriate instrument for achieving equilibrium and which behaviour to adopt within competitive markets.

It should be emphasized that all the studies presented in this collection analyse the role of enterprises with public participation or their privatization process in a general way, never taking into consideration or focusing on the role that these enterprises can have at a local level.

The decision to consider only studies regarding the public presence in a general way was not a motivated choice, but rather a necessary one. There is very little in the economic literature regarding the local dimension of the above-cited phenomenon. Few contributions regarding the local sphere have been made and often these are not very specific.

Despite these theoretical gaps and the many criticisms advanced against enterprises with public participation by supporters of

privatization, at the European level today both public and shared ownership enterprises is widespread.

In the next section the phenomenon of the public presence within European enterprises will be considered both for principally monopolistic markets and for those with a higher level of competition.

After analysing how this phenomenon is rooted in the European economy, we evaluated the operative and financial performance of public participation enterprises at central and local levels and their contribution within the various sectors of the market.

3. Description of the sample

3.1 Introduction

A recent debate has shown that public participation in enterprises is still a widespread phenomenon in Europe. In particular it stressed the relevance of "municipal capitalism", i.e. of the increasing presence of enterprises created and owned by local Governments in various sectors (Vernon, 1979, Boardman and Vining, 1989, Bortolotti, Pellizzola and Scarpa, 2007).

Government owned enterprises extend their influence beyond the "traditional" domain of public intervention (e.g., natural monopolies), including business areas in which competition is a common feature.

For this reason, especially in specific sectors, these enterprises are often accused of distorting competition.

The research aims at giving as detailed an overview as possible of the diffusion of companies which remain in public hands in the EU27 scenario. Unlike some previous analyses, moreover, we are able to document not only "State capitalism" but also the presence of local authorities in these companies.

The distinctive additional element of this research, compared to the studies already presented in the economic panorama, consists first of all in having built a totally innovative database which can provide very detailed information about public institutions' participation in European enterprises, showing financial and operational performance data for each of these

enterprises. Unlike other analyses, this research emphasizes the participation of central public entities, but above all local authorities, in the limited companies and the role of these enterprises within the national and local economies. This dataset thus allows us to study a phenomenon that is in some way "new" compared to what has been seen in the past. It allows us to note how firmly the public presence is rooted in the economy of individual countries and therefore to what degree resistance to privatising enterprises is still significant, whether these enterprises operate within natural monopolies or in competitive sectors. In other words, this work shows that public participation within enterprises is perceived not only as a way to re-launch and sustain the economy, but often as a genuine intervention tool that public entities have in the marketplace, whether they be the central State or peripheral levels of Government.

The analysis investigates all large and medium-size European companies with at least partial ownership by a public entity. Then it identifies direct and indirect holdings by central and local Governments in each country, providing descriptive evidence of their impact on the country's economic activity and on operating and financial performance.

The next section describes the database and the sample. Section 3.3 describes the public shareholders. Section 3.4 examines Government owned enterprises in different economic sectors.

Section 4 describes public ownership distribution in the European area and shows the weight of public enterprises on country and regional economies in terms of their shares of value added.

Section 5 evaluates the financial and operative performance of European public enterprises.

Section 6 analyses Italian public enterprises in the European context.

3.2 *The data*

The source of the data is Bureau van Dijk Ownership Database, belonging to the data bank AMADEUS.

The database includes 250,000 non-financial companies satisfying at least one of the following dimensional requisites:

For the UK, Germany, France, Italy, Spain, Ukraine and Russian Federation:

- operating revenue equal to at least €15 million,
- total assets equal to at least €30 million,
- number of employees equal to at least 200.

For all other countries:

- operating revenue equal to at least €10 million,
- total assets equal to at least €20 million,
- number of employees equal to at least 150.[11]

_____

[11] Companies with Turnover per employee or Total Assets per employee below 1,000 EUR are also excluded from the sample.

The countries that we have considered for the analysis are those of EU 27, namely:

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Although this list shows an evident heterogeneity, the institutional status (belonging to EU 27) provides an important common basis. However, later analyses will have to distinguish different situations, in particular between Eastern and Western countries.

Companies in the sample could either be individual companies or part of a larger industrial or financial group, of which they could be the parent company or a subsidiary. For each company, we checked the control chain with direct and indirect shareholders and as ultimate shareholder the indirect one owning 25 percent or more of the company.

The shareholders were divided according to their peculiarities so it was easy to distinguish between industrial companies, banks and institutions, individuals and public shareholders. Included among the latter are central and local Governments and other public administration organizations.

The data are provided by Amadeus for each year, but we focused only on a cross-section referring to the latest available year (2005 for the vast majority of the companies).

At the beginning, the sample counted 16,194 companies, with at least one public shareholder in their corporate structure. The Amadeus shareholders classification made it possible to assign a reference public shareholder to each company in the sample.

As already said, companies in the database could be either individual companies, parents or subsidiaries. The first screening aimed at selecting subsidiary companies in order to avoid a double count where their financial data were already present in the parent company's consolidated accounts. Because of the huge number of companies, first we checked whether a parent of another company was also in the sample. As a second step we evaluated the participation share, choosing 50% as minimum value in order to homogenise the analysis.[12] Finally we checked whether parent company accounts were actually the consolidated ones. As these three conditions were contemporaneously satisfied in several cases, we could drop 2,505 companies from the sample, defining them as subsidiaries.

Dropping the subsidiaries, we arrived at a sample with 13,689 companies, 316 listed and 13,373 non listed.

Amadeus also provides data concerning the accounts of the companies in the sample. We analysed three principal variables: total assets, operating revenues and employees.

The database is unfortunately characterized by much missing data, above all for East European countries, although many "not available" (NA) entries can be found in the old Europe countries too.[13]

Another sample screening was run in order to drop companies which do not have all the three main variables of interest available. Only 4,930 of the 13,689 companies of the initial

---

[12] According to the international accounting standards when a enterprise's participation in a subsidiary exceeds 50% it must include that subsidiary in its consolidated accounts.

[13] Needless to say, this raises a concern that missing data may introduce a bias in the analysis. However, with the exception of Eastern European countries, we have no clear evidence that missing data follow a systematic pattern.

sample had all the data needed; 2,548 had just two of them; 5,183 had only one and 1,028 had no data at all.

We tried to find a solution to this lack of information by looking for alternative data by way of internet, but it was possible to collect data only for large companies. This was due to difficulties in finding data about accounts as well as language problems for small companies, above all from Eastern Europe.

Another data source we consulted in order to fill these gaps was Lexis Nexis. This internet site – commonly used in similar analyses – provides much data about several companies. For large companies, the whole budget is available, but the information is less exhaustive for smaller companies.

Thanks to this cross-analysis we were able to find data for about 720 additional companies. The easiest variable to find was employment; the most difficult was operating revenue, which unfortunately contained some missing data.

For the sake of completeness, all companies presenting missing data were dropped from the sample. Probably this greatly reduced the number of companies in Eastern Europe. We have no reason to think that this has introduced distortions for the Western European countries.

Incomplete and incorrect classifications concern not only the three variables mentioned above. In fact, Amadeus not only contains "NA" entries, but often displays apparently incorrect ones, such as data concerning shareholders typology. This is typical of UK companies, where many private subjects have been classified as "State." The same happens with chambers of commerce and local Governments, sometimes classified as "State".

Whenever necessary, we corrected the classification. Whenever we detected a shareholder with an incorrect classification, we

decided that caution was necessary and dropped the company from the sample.

Once incorrectly classified companies and those with missing data were missing were excluded, only 5,649 companies remained in the sample.

3.3 Identifying public shareholders

We then proceeded by identifying the character of the public shareholder. Four different Government levels were considered in our database: one central level and three lower levels, which we have labelled "regions", "provinces" and "municipalities".

This decision was made on the basis of a preliminary analysis of the administrative structure in every single country considered. The countries show considerable institutional diversity. In some of them only two levels below the State exist, while in other cases there are four levels. However, for the sake of simplicity and comparability, but also in order to identify those levels of Government with enough autonomy and power to intervene in the economy, we limited our consideration to three levels, grouping together the lower levels (e.g., *canton* and *commune* in France; *comuni* and *comunità montane* in Italy) where the actual relevance of the distinction seemed disputable.

In the sample under analysis, there are countries with a centralized structure like Italy, France and Portugal (among those of major economic importance), countries with a federal structure like Germany, Austria and Belgium, and finally

countries with a constitutional monarchy like the UK, Spain, the Netherlands, Denmark and Luxembourg.

Considering all these differences in the governing and institutional structures of the countries under examination, for clarity of analysis it is opportune to present a general framework of the international organisation of each individual country.

As a preliminary observation, it should be emphasized that the sample contains countries that, for territorial extension, are profoundly different. This is a primary reason why the countries 'governing structures are profoundly dissimilar. Obviously in terms of internal divisions a country like France cannot be compared to a country like Cyprus. Having said this, we will go on to analyse the various administrative subdivisions with greater precision.

As stated above, three countries have a federal structure: Austria, Belgium and Germany. Their internal division is almost identical – that is, three or more clearly distinguishable levels of Government. The first of these, which in Germany and in Austria takes the name of *Land* (in Belgium, *Region*), is without a doubt the most important administrative level. It possesses its own legislative competencies, separate from those of the central Government. Each *Land* is in turn subdivided into districts (*Provinces*) and municipalities. (Often the same municipalities are in turn subdivided into cities and surroundings.) These show a high degree of autonomy in specific areas delegated by the higher levels of Government (for example, imposing taxes and formulating political directives regarding instruction).

Even countries with monarchical structure show internal similarities. In Spain and the UK (and surprisingly enough Luxembourg) three levels of Government are easily distinguishable. The first of these (*district* in Luxembourg and

region in Spain and the UK) is the most important in terms of administrative competencies. This level of Government includes finer administrative divisions and partially delegates its power to lower level administrations over which it has control. The Netherlands and Denmark, on the other hand, have only two distinct levels of Government. For both countries, the first local Governmental level is an administrative layer between national Government and local municipalities, responsible for matters of sub- or regional importance. In Denmark, the first level is labelled *county*, while in the Netherlands, *province*.

The last countries to be considered are centrally structured republics. Within this group distinctive characteristics can be identified regarding the degree of the central Government's decentralisation of powers to local levels. For example, France, Italy and Portugal are divided into several administrative levels: *Région*, *département*, *canton* and *commune* in France; *regions*, *provinces* and *communes* in Italy; and *districts*, *regions* and *municipalities* in Portugal. Every subdivision has decentralised powers, as well as its own full autonomy. The third level of Government has deliberative and executive powers in many areas.

The situation is different for Ireland, Finland and Sweden. In Ireland only two levels of Government can be distinguished, while in Finland and Sweden the situation is more complex. Finland is in fact subdivided into various levels, but only two of these are levels of democratic Government: the State and the municipalities. Provinces are merely territorial divisions, while the regions' main tasks the are regional planning and development of enterprise and education.

In Sweden, regions and municipalities are equal parties in local self-Government. Municipalities are responsible for local tasks and duties while regions are responsible for regional tasks and

duties. These Government levels cooperate closely in several areas.

As for the Eastern European countries in our sample, the administrative subdivision within their territories is less varied. Usually two or three lower levels of Government can be identified, but actual power remains extremely centralised. Despite this, lower-level competencies regarding management of essential territorial services such as education, culture, transportation and environmental services can be identified. Only Romania, Bulgaria and Poland have Government sub-levels with administrative and legislative autonomy.

We assigned a Governmental level to each single public shareholder, in each country. Often there is more than one public shareholder. The most common example is of a subsidiary of different municipalities with different nationalities at the same time (in this case the shareholder is defined as "*foreign*"). In some cases public shareholders belong to different levels of local Government; in other cases central Government participates with local Governments.

All these have been defined as "*mixed cases*".

When there are more shareholders at a particular Governmental level, the company is said to have shareholding at that level. When shareholders belong to different levels, the main shareholder in terms of ownership has been identified whenever possible. Finally, when shareholders belong to different levels and the major shareholder cannot be identified because of lack of information or equal division of ownership, the public shareholder in the company is defined as "*mixed local*".

Similar to the financial data problems were problems of missing information regarding the share owned by public shareholders. Sometimes the information about the presence of such

shareholders was not matched by equally accurate information about the number of shares owned by this (or other) shareholder.

For this reason, the control chain for the companies in the sample cannot be identified. Therefore, the analysis will be based on the *presence of public ownership*, rather than on the extent of *public control*.

Many problems have been encountered for activity sector data as well. These will be discussed later.

In conclusion, the sample on which the analysis is based includes 5,649 companies, each presenting at least one public, local or central shareholder.

For each of these enterprises the budgetary data mentioned above were collected, in addition to the field of activity.

Although the number of companies included in the sample does not cover the entire European landscape of enterprises with public participation, nonetheless it is to the best of our knowledge the largest available dataset on this issue and represents a significant contribution for assessing how this phenomenon is rooted in the countries considered.

3.4 Identifying company activities

The companies are active in a large number of sectors. The Amadeus data bank classifies companies according to the SIC (*Standard Industrial Classifications*). The SIC gives each enterprise a 4-digit code that allows a very specific identification[14] of the sector of the business's activity.

During the analysis many problems were encountered in terms of attribution of the actual sector of activity. Often, in fact, erroneous SIC attributions were found in the AMADEUS database.

The greatest problems were identified in the classification of local transportation. Many companies were assigned to this sector even though the activity they carried out was often different[15]. The most common case was that in which the enterprise's real activity was connected to road and highway building, but there were many cases from the "transportation" sector where the enterprise's activity was found to be profoundly different.

Another SIC code that created some problems was that used for classifying holding companies. Sometimes the parent enterprise of a very clearly identifiable industrial group was placed in this category.[16]

---

[14] Using this classification, one can identify more than 700 possible entries (4 digit codes).

[15] Production which also entails the transportation of goods often leads to a classification as "transport" for enterprises whose main activity is in fact quite different.

[16] According to the AMADEUS classification more than 350 companies in the sample carried out holding activities.

To partially resolve the problem connected to erroneous classification of the sample's enterprises into sectors, industry codes attribution was thoroughly checked. In particular, in order to minimize the impact of possible mistakes, the largest 200 companies (in terms of assets) indicated as belonging to the transportation sector were checked. Then an up-to-date search of every single enterprise was made to identify its primary activity.

Where the activity was clearly totally different, the enterprise's SIC code was corrected.

For the holdings, on the other hand, a more complex procedure was used. We analyzed all the businesses that AMADEUS classified as holdings. Then we evaluated whether these were shareholders for other businesses in the sample, after which we reclassified them. For these businesses, a specific search was made to try and identify their primary activity. Where this was found to be impossible, the activity carried out by the business in which the "holding" participated was considered.

Where some similarity between the activities carried out by the two companies could be found, the SIC sector of the participating business was assigned to the "holding." In other cases an internet research into the business's SIC was carried out. Often, the Lexis-Nexis database was also consulted.

Where different reliable information about the business's activity could not be found, the classification of the holding was left as it was. In our sample, businesses classified as holdings were brought into in the finance sector.

After correcting the SIC mistakes, in order to facilitate the analysis the companies were re-grouped into 11 broad categories, designed to better reflect the presence of central and local public authorities in these companies.

These categories are:

- Agriculture;

- Communications (TLC);

- Constructions;

- Finance;

- Manufacturing;

- Oil and Mining;

- Postal Services;

- Trade;

- Transportations;

- Services;

- Utilities.

It appears that some of these sectors were so "crowded" (and internally diversified) that a finer classification was needed. In particular, the transportation, services and utilities sectors were further broken down into sub-categories (table 1) based on the variety of activities carried out.[17 – 18]

Within the transportation sector, distinctions were made in an attempt to separate – whenever possible – transportation infrastructures from transportation services. These are very different in terms of financial engagement and because they are

---

[17] As can be seen, the number of total companies in terms of sector divisions is lower than the overall number of companies considered. This is because AMADEUS did not provide the SIC reference for some companies. Where it was not possible to attribute the company to one specific sector, it was excluded from this type of analysis.

[18] On this and other topics covered by this analysis, we include a selection of the tables in the text. More detailed information can be found in the Appendix.

meant to meet very different needs: Airports, Highways, Local Transportation, Railways, Air Transportation, Transportation Services, Trucking and Warehousing, and Water Transportation.[19]

The services were divided into 4 sub-groups: Business Services, Engineering and Management Services, Health Services and a more generic sector termed Other Services.

For the utilities sector, attribution to one of the sub-sectors called for great attention.

Four primary micro-sectors were identified: electricity, environmental services, gas and water services. In addition, it was necessary to single out another micro-sector called multi-utility. Here all those companies that carried out more than one service were gathered.

Notice that almost all utility companies probably carry out more than one activity. We attempted to identify those companies whose efforts are almost entirely devoted to a specific sector and to distinguish them from "truly diversified" companies. Inclusion in one category or another is sometimes a bit arbitrary. Ideally, revenues or assets should be broken down for each activity, but this information is rarely available (either in Amadeus or elsewhere). Considering the large quantity of data and the different countries to which the enterprises belong, it was impossible to evaluate every single enterprise balance sheet. Whenever the SIC indicated by Amadeus was "multi-utility" we tried to be more specific, using information from Lexis Nexis. If no better information was available, we had to depend on the AMADEUS classification.

---

[19] Within the Water Transportation sector, AMADEUS also includes ports. Inter-ports belong to the Trucking and Warehousing sector.

Table 1. GOEs by Sector

SECTOR	Number of GOEs*	of which owned by	
		Central Govt.	Local Govt.
AGRICULTURE	96	87	9
COMMUNICATIONS	90	76	14
CONSTRUCTIONS	206	128	78
FINANCE	676	268	408
MANUFACTURING	898	801	97
OIL and MINING	94	88	6
POSTAL SERVICES	20	20	
TRADE	363	277	86
TRANSPORTATIONS - of which	*956*	*649*	*307*
AIRPORTS	69	19	50
HIGHWAYS	48	31	17
LOCAL TRANSPORTS	338	185	153
RAILWAYS	48	29	19
TRANSPORTATION BY AIR	15	14	1
TRANSPORTATION SERVICES	189	163	26
TRUCKING AND WAREHOUSING	170	149	21
WATER TRANSPORTATION	79	59	20
SERVICES - of which	*1,349*	*737*	*612*
BUSINESS SERVICES	362	172	190
ENGINEERING & MGMT SERVICES	455	314	141
HEALTH SERVICES	154	93	61
OTHER SERVICES	378	158	220
UTILITIES - of which	*765*	*216*	*549*
ELECTRICITY	298	123	175
ENVIRONMENTAL SERVICES	143	18	125
GAS	109	20	89
MULTIUTILITIES	78	35	43
WATER SERVICES	137	20	117
TOTAL	**5,513**	**3,347**	**2,166**

*136 missing values
Note: The data refer to 2005.
Source: *AMADEUS Database* (Bureau van Dijk).

4. Government owned companies in Europe

4.1 Introduction

In the 27 EU countries, as can be shown by the data (2005), public ownership of enterprises is widespread (table 2).

Table 2. GOEs by Country

COUNTRY	Number of GOEs	of which owned by	
		Central Govt.	Local Govt.
AUSTRIA	77	23	54
BELGIUM	48	32	16
BULGARIA	525	520	5
CYPRUS	1	1	
CZECH REPUBLIC	26	23	3
DENMARK	21	13	8
ESTONIA	39	33	6
FINLAND	58	53	5
FRANCE	706	598	108
GERMANY	1,125	144	981
GREECE	97	64	33
HUNGARY	10	8	2
IRELAND	19	19	
ITALY	538	91	447
LATVIA	9	9	
LITHUANIA	14	14	
LUXEMBOURG	3	3	
NETHERLANDS	88	60	28
POLAND	1,109	1,076	33
PORTUGAL	40	16	24
ROMANIA	415	287	128
SLOVAKIA	2	2	
SPAIN	302	51	251
SWEDEN	118	117	1
UK	259	174	85
TOTAL	**5,649**	**3,431**	**2,218**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Shareholding of public entities within companies, however, varies from country to country. This is quite natural given the institutional variety of the countries, their diverse levels of economic development and the political differences among them.

We have included in our sample both Western European countries and former planned economies, fully aware that this choice entails some risks, in that the sample heterogeneity may be rather high. However, we believe that the presence of Eastern economies adds interest to the analysis, by allowing us to demonstrate whether the difference between traditional market economies and these "newcomers" is still considerable. We have decided to distinguish the two groups of countries in several analyses, in order to control to what extent the traditional differences remain relevant.

Within these two macro-regions the countries' unique characteristics are rather homogenous, above all in terms of economic development. The same cannot be said comparing Eastern and Western countries. Based on this factor, therefore, different financial and productive performance levels by enterprises and also different concentrations of these public enterprises are to be expected.

Governing structure may not be important in terms of the public presence in the economy. However, it may be a qualifying element regarding the type of public shareholders within the enterprises.

In countries with a federal structure, is local public participation more important compared to central public participation? This question finds an immediate response from the data analysis in table 2. In the two largest federally-structured countries, Austria and Germany, the number of enterprises with local participation

considerably surpasses those with central participation. Furthermore, other non-federal countries have a local "public capitalism" level which is at least as strong as the Austrian one. This forces us to be cautious in interpreting the result.

Before using a focused analysis to evaluate the public enterprises' performance in the different countries, however, we should describe how the analysis was carried out and what primary results were reached.

The chapter is organized as follows: after a first general analysis of the enterprises that make up our sample, their dispersal in the European territory will be studied, showing the sectors in which they operate and subdividing the analysis according to central or local public property. Finally, we will try to understand the contribution these enterprises make to the Country-GDP and Regional-GDP.

4.2 An aggregate overview of the firms in our sample

The criteria of inclusion allows us to analyse all the enterprises with at least one public shareholder, whether this be central or local.

The central State is present in 3,431 of the 5,649 companies. Of these, 167 are listed, while the remaining ones (3,264) are unlisted. Enterprises with local public shareholding number 2,218, of which only 40 are listed (table 3).

Table 3. GOEs by Level of Government

| LEVEL OF GOVERNMENT | Number of GOEs | of which | | Total assets th EUR | Average assets th EUR | Operating Revenues th EUR | Average Operating Revenues th EUR | Number of Employees | Average Number of Employees |
		Listed	Not Listed						
STATE	3,431	167	3,264	2,328,373,203	678,628	1,314,543,862	383,137	5,887,256	1,716
REGION	332	9	323	374,340,771	1,127,532	203,668,367	613,459	589,734	1,776
PROVINCE	99	5	94	16,271,628	164,360	8,699,081	87,870	61,983	626
MUNICIPALITY	1,767	26	1,741	246,897,272	139,727	126,879,086	71,805	575,482	326
MIXED LOCAL	20	0	20	2,204,913	110,246	671,978	33,599	3,615	181
TOTAL	**5,649**	**207**	**5,442**	**2,968,087,787**	**525,418**	**1,654,462,374**	**292,877**	**7,118,070**	**1,260**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

67

To evaluate how public participation is broken down within the various countries and to understand what function this has in the descriptive analysis, all companies will be considered independently of the shareholding institution.

Not surprisingly, the companies held by the central State have the highest impact in terms of total assets – 2 billion Euro (78% of the total); operating revenues – 1 billion Euro (79% of the total); and employees – 6 million (83% of the total) (table 4).

For local entities, the data show the numerical importance of enterprises with municipal shareholding (1,767) and the economic importance of the enterprises with regional shareholding.

The second highest local institution on the list of economic data is the municipality.

Numerically, municipalities have an 8% impact on total assets, 8% on operating revenues and 8% on number of workers.

On the other hand, the data regarding provinces and mixed cases is minimal. Their aggregate weight is almost nil.

The data regarding provinces was rather predictable, considering the administrative subdivision of many countries, where the second level of Government is either non-existent (as in the case of the Netherlands) or where existent, largely territorial in structure, without any institutional power - or in the case of Italy holds a fundamental role in implementing local development policy, labor or training – areas for which the business structure may not represent the most appropriate organizational form (Bortolotti, Pellizzola, Scarpa, 2007).

Table 4. GOEs weight on total by Level of Government

LEVEL OF GOVERNMENT	Number of GOEs	Total assets th EUR	%	Operating Revenues th EUR	%	Number of Employees	%
STATE	3,431	2,328,373,203	78.45%	1,314,543,862	79.45%	5,887,256	82.71%
REGION	332	374,340,771	12.61%	203,668,367	12.31%	589,734	8.29%
PROVINCE	99	16,271,628	0.55%	8,699,081	0.53%	61,983	0.87%
MUNICIPALITY	1,767	246,897,272	8.32%	126,879,086	7.67%	575,482	8.08%
MIXED LOCAL	20	2,204,913	0.07%	671,978	0.04%	3,615	0.05%
TOTAL	**5,649**	**2,968,087,787**	**100%**	**1,654,462,374**	**100%**	**7,118,070**	**100%**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

At the aggregate level the sector with a highest number of enterprises is services; it has 1,349 enterprises, 24% of the total (table 5).

Although the services sector surpasses all others numerically, it does not have the highest level of total assets. The sector with the highest level of total assets is represented by utilities overall. The micro-sector that most influences this value is undoubtedly that of electricity. The utilities sector impacts on the aggregate value of total assets for about 22%, while electricity for 18%.

The next largest sectors are manufacturing (21% of total assets) and transportation, both for number of companies and amount of assets. The transportation sector has a higher number of employees, equal to 1 million people, which is 17% of the total.

The data concerning transportation and utilities are not only very important but also predictable. Their superiority in terms of size and percentage of public participation was predictable.

The most surprising data concern the number of companies present in the services sector. Since this is traditionally a more competitive area, it is less clear why many of these enterprises have the participation of public entities.

Table 5. GOEs by Sector, % of incidence

SECTOR	Number of GOEs	% Number of GOEs	Total assets th EUR	%Total assets	Operating Revenues th EUR	% Operating Revenues	Number of Employees	% Number of Employees
AGRICULTURE	96	1.74%	6,450,582	0.22%	2,706,158	0.16%	41,378	0.58%
COMMUNICATIONS	90	1.63%	313,469,661	10.57%	157,909,573	9.55%	617,389	8.69%
CONSTRUCTIONS	206	3.74%	13,752,707	0.46%	7,540,591	0.46%	64,257	0.90%
FINANCE	676	12.26%	168,189,112	5.67%	58,250,983	3.52%	255,666	3.60%
MANUFACTURING	898	16.29%	611,010,962	20.60%	442,578,640	26.76%	1,561,788	22.00%
OIL and MINING	94	1.71%	362,618,586	12.22%	340,569,239	20.59%	457,032	6.44%
POSTAL SERVICES	20	0.36%	347,725,346	11.72%	101,429,942	6.13%	1,366,518	19.25%
TRADE	363	6.58%	44,294,351	1.49%	46,396,158	2.81%	121,893	1.72%
TRANSPORTATIONS - of which	*956*	*17.34%*	*348,144,343*	*11.74%*	*140,533,490*	*8.50%*	*1,195,965*	*16.84%*
AIRPORTS	69	1.25%	29,949,681	1.01%	10,743,184	0.65%	83,847	1.18%
HIGHWAYS	48	0.87%	8,346,955	0.28%	2,367,854	0.14%	13,894	0.20%
LOCAL TRANSPORTS	338	6.13%	24,991,303	0.84%	12,964,308	0.78%	191,059	2.69%
RAILWAYS	48	0.87%	249,287,894	8.40%	83,525,852	5.05%	726,310	10.23%
TRANSPORTATION BY AIR	15	0.27%	14,817,074	0.50%	12,653,802	0.77%	70,835	1.00%
TRANSPORTATION SERVICES	189	3.43%	4,794,531	0.16%	8,015,795	0.48%	43,727	0.62%
TRUCKING AND WAREHOUSING	170	3.08%	4,515,118	0.15%	6,872,686	0.42%	37,963	0.53%
WATER TRANSPORTATION	79	1.43%	11,441,787	0.39%	3,390,009	0.20%	28,330	0.40%
SERVICES - of which	*1,349*	*24.47%*	*112,585,688*	*3.80%*	*64,111,872*	*3.88%*	*493,972*	*6.96%*
BUSINESS SERVICES	362	6.57%	27,468,544	0.93%	19,969,162	1.21%	99,481	1.40%
ENGINEERING & MGMT SERVICES	455	8.25%	62,567,060	2.11%	26,782,818	1.62%	143,722	2.02%
HEALTH SERVICES	154	2.79%	8,161,579	0.28%	6,956,940	0.42%	124,850	1.76%
OTHER SERVICES	378	6.86%	14,388,505	0.49%	10,402,952	0.63%	125,919	1.77%
UTILITIES - of which	*765*	*13.88%*	*638,101,056*	*21.51%*	*291,907,655*	*17.65%*	*924,730*	*13.02%*
ELECTRICITY	298	5.41%	519,934,071	17.53%	225,698,926	13.65%	657,725	9.26%
ENVIRONMENTAL SERVICES	143	2.59%	10,154,720	0.34%	5,023,544	0.30%	39,866	0.56%
GAS	109	1.98%	55,158,194	1.86%	34,735,598	2.10%	116,063	1.63%
MULTIUTILITIES	78	1.41%	24,007,622	0.81%	14,499,040	0.88%	59,363	0.84%
WATER SERVICES	137	2.49%	28,846,449	0.97%	11,950,547	0.72%	51,713	0.73%
TOTAL	**5,513**	**100%**	**2,966,342,394**	**100%**	**1,653,934,301**	**100%**	**7,100,588**	**100%**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

4.3 The distribution of public ownership within Europe

Geographical distribution of public ownership within the European scenario is very unequal.

From the data, it is evident that in some countries, both in Western and Eastern Europe, the phenomenon of public participation is widespread.

Germany, France and Poland are the countries that in absolute terms show the highest concentration of public enterprises on their territories. This high value is also found for total assets, operating revenues and employees.

A strongly significant piece of information in this regard is the notable public presence within UK enterprises, with 259 enterprises at least partially owned by central or local Governments. This value is not very different from the values for Spanish, Italian and French public participation. In these countries, we know that the public presence in the economy is still very important. However, it should be emphasized in the English case that this country has been one of the main supporters and promoters of privatisation, with the first and probably most important privatisation programme in the whole world.[20]

In October 1979 the Thatcher Government inaugurated its privatisation programme by selling shares in British Petroleum.

---

[20] See for instance Florio (2004) for a comprehensive account of this programme and its welfare evaluation.

The aim of the British privatisation programme was first to improve the Government's financial position, but then it was so successful that the idea of creating popular capitalism took over.

In a few years, 1979-1983, 12 public enterprises were partially or totally privatised. Then between 1983 and 1991 another 64 State companies were sold, including the 12 Regional Electricity companies and the 10 Water and Sewerage companies. In subsequent years the privatisation programme was completed, including the sale of British Rail.

In some cases there was a bulk sale of 100% of the shares (for example British Airways). In other cases the operation was split into tranches (British Telecom). In yet other cases, the Government remained a shareholder with special power through the "golden shares", for example in companies such as British Airports Authority, British Gas, British Telecom.

Through this privatisation programme, about a million employees were transferred to the private sector and the percentage of GDP attributed to SOEs fell from 9% to 3.5%.

The main macro-sectors involved in the process were energy, transports and services, telecommunications, water and steel (Florio, 2002).

After this enormous effort, quite a few enterprises - 259 - still remain in public hands (for example SEEBOARD ENERGY GAS LIMITED and NUON UK LTD for the utilities; EXEL EK LIMITED and THE MANCHESTER AIRPORT GROUP PLC for transports; STATOIL (U.K) LIMITED and OMV (UK)LIMITED for the oil and mining sector.

The most surprising element regards the sectors where we now find the largest presence of English public enterprises: services, utilities and transportation. This data is surprising for utilities precisely because the largest wave of privatisations in the UK

has been in this very sector, especially electricity. However, as repeatedly stressed, the presence of the public sector in these general interest services is usually considered a very normal situation. The data for services appear even more peculiar because this is a strongly competitive sector. It is difficult to explain why within a country which has embraced such a consistent program of privatization, the public presence is still so widespread in one of the most competitive sectors.

Two other countries deserve particular attention - Sweden and Finland. In these two countries almost all enterprises with public participation are in the hands of the central Government.

This is particularly surprising because it is well known that local public participation in enterprises has an absolutely relevant role, especially within Sweden (Kumbhakar and Hjalmarsson, 1996).

In fact the explanation for this data is that, as already anticipated previously, many enterprises were not considered because they had a problem of missing data within the AMADEUS database.

To confirm the reliability of the Swedish data available to us, a sample check was made to verify whether the public shareholder of the business should be classified as central. For the companies under analysis, the data was found correct. The largest shareholder that was shown was a governing or ministerial office of the Government itself (*Regeringskansliet*).

The same procedure was followed in order to check the data from Finland, with the same results.

In the sample, other exceptional cases were identified: Ireland, Slovakia, Cyprus, Slovenia and Malta.

For the first three countries, it can be seen that, even if they are not very important numerically (19, 2, 1), the only enterprises with public shareholding are held by the central State.

Slovenia and Malta were excluded from the analysis: Slovenia because of screening due to incomplete financial data, Malta because according to AMADEUS it does not possess enterprises with mixed participation.

Analyzing the dimension of total enterprise assets, we see that a larger number of enterprises does not always correspond to higher assets value. In the case of Germany, for example, which has a strong percentage of local public participation, the dimension for these enterprises' assets is notably lower than those held by the central State.

The 981 companies held by local entities have an assets value of about 460 billion Euros (2005). This is much lower than the value of the 144 centrally-held companies, equal to 576 billion Euros (table 6).

This data in fact is easily justifiable. The central Government, often total or partial owner of enterprises, is much more important to the country's economy than are enterprises with local participation.

Table 6. GOEs by Country, Central v. Local

COUNTRY	Number of GOEs	of which owned by		Listed		Unlisted		TOTAL ASSETS th EUR		OPERATING REVENUES th EUR		NUMBER OF EMPLOYEES	
		Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.
AUSTRIA	77	23	54	5	1	18	53	41,639,014	10,072,980	29,459,613	4,903,691	111,204	31,783
BELGIUM	48	32	16	3	2	29	14	33,593,776	5,096,141	17,484,693	1,734,330	110,297	7,611
CYPRUS	1	1		1				323,256		319,642		2,364	
DENMARK	21	13	8			13	8	6,870,492	51,606	4,471,873	31,586	5,763	136
FINLAND	58	53	5	12	3	41	2	59,066,901	7,472,586	49,966,721	5,152,387	146,343	27,221
FRANCE	706	598	108	15	2	583	106	761,514,491	15,178,248	404,206,682	3,880,795	1,585,150	12,417
GERMANY	1,125	144	981	6	12	138	969	576,306,339	459,874,976	318,298,749	255,389,912	1,308,885	767,662
GREECE	97	64	33	7		57	33	36,213,480	341,666	18,551,247	226,531	74,736	6,511
IRELAND	19	19		1		18		3,566,580		1,978,898		9,705	
ITALY	538	91	447	6	10	85	437	390,425,038	76,271,184	176,136,464	37,025,088	547,069	204,131
LUXEMBOURG	3	3		2		1		1,144,867		759,576		547	
NETHERLANDS	88	60	28	4	1	56	27	140,208,039	35,375,369	87,756,123	18,436,516	211,038	40,040
PORTUGAL	40	16	24	1		15	24	216,785	1,170,445	266,253	175,443	1,517	2,205
SPAIN	302	51	251		1	51	250	7,922,009	17,728,254	6,906,533	4,966,086	97,561	41,147
SWEDEN	118	117	1	7		110	1	95,920,135	10,480	55,111,435	12,863	191,412	101
UK	259	174	85	2	7	172	78	50,428,686	7,994,194	43,627,091	6,583,655	335,010	57,245
Total West	*3,500*	*1,459*	*2,041*	*72*	*39*	*1,387*	*2,002*	*2,205,359,948*	*636,638,129*	*1,215,301,593*	*338,518,883*	*4,738,601*	*1,198,210*
BULGARIA	525	520	5	64		456	5	11,432,157	22,393	7,396,050	24,017	180,741	1,156
CZECH REPUBLIC	26	23	3	1		22	3	6,021,129	251,487	3,287,052	142,257	61,936	788
ESTONIA	39	33	6	1		32	6	3,699,260	111,134	1,927,177	58,709	24,145	3,030
HUNGARY	10	8	2		1	8	1	600,894	1,231,874	2,026,793	533,361	3,317	8,140
LATVIA	9	9		1		8		1,142,446		1,016,775		15,966	
LITHUANIA	14	14		7		7		4,477,329		4,520,743		12,440	
POLAND	1,109	1,076	33	16		1,060	33	78,899,153	1,105,008	70,579,606	504,636	673,147	11,327
ROMANIA	415	287	128	5		282	128	16,055,697	354,559	7,540,835	136,649	174,713	8,163
SLOVAKIA	2	2				2		685,190		947,238		2,250	
Total East	*2,149*	*1,972*	*177*	*95*	*1*	*1,877*	*176*	*123,013,255*	*3,076,455*	*99,242,269*	*1,399,629*	*1,148,655*	*32,604*
TOTAL	**5,649**	**3,431**	**2,218**	**167**	**40**	**3,264**	**2,178**	**2,328,373,203**	**639,714,584**	**1,314,543,862**	**339,918,512**	**5,887,256**	**1,230,814**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

An example to clarify this is that of DEUTSCHE POST AG, the enterprise that carries out postal services. Held by the central State, its total assets value alone is equal to 172 billion Euros (17% of Germany's total assets). Another example is DEUTSCHE TELEKOM AG, a communications enterprise whose total assets, equal to 128 billion Euros, represent 12% of the total. Finally, comparing total assets value in absolute terms and in terms of their average values, some unique aspects appear (table 7). While in absolute terms Germany and Italy are the largest countries in terms of total assets, the same cannot be said for average values. In this case the two largest countries turn out to be the Netherlands and Finland. This fact should not be underestimated. It shows that average business size in the Netherlands is larger than that of German enterprises. The same phenomenon can be interpreted in another way. That is, in Germany, although the number of enterprises with public shareholding is very high and although in absolute terms the assets value is the highest in Europe, it is likely that only a few of the total number of enterprises impact in a relevant manner on assets. At the same time, these enterprises are so much smaller size that they negatively influence the average value.

In the Netherlands, enterprises with public shareholding are numerically fewer but are much more significant in terms of size.

If the same evaluation is made based on the dimensional criteria of the number of employees, we see that in Poland the average number of workers is much lower compared to other countries, not only in terms of countries with a similar number of enterprises but also compared to countries with a much smaller number of enterprises. In Finland, for example, 58 public enterprises have an average of 2,992 employees, as in the Netherlands. This is coherent with what was previously stated. In Poland, on the other hand, 1,109 enterprises have an average

of 617 employees. In Germany, a country with higher total assets and operating revenue in absolute terms, the average number of employees, 1,846, remains high but is still much lower than smaller countries for the other two dimensional measures.

The final case that calls for particular attention is Cyprus. The data show the existence of a single public enterprise with State participation. In terms of assets and operating revenue this has average to low values, but the average number of workers is much higher.

Table 7. GOEs by Country; Total assets, Operating Revenues and Employees.

COUNTRY	Number of GOEs	of which Listed	of which Unlisted	Total assets th EUR	Average assets th EUR	Operating Revenues th EUR	Average Operating Revenues th EUR	Number of Employees LastYear	Average Number of Employees
AUSTRIA	77	6	71	51,711,994	671,584	34,363,304	446,277	142,987	1,857
BELGIUM	48	5	43	38,689,917	806,040	19,219,023	400,396	117,908	2,456
CYPRUS	1	1		323,256	323,256	319,642	319,642	2,364	2,364
DENMARK	21		21	6,922,098	329,624	4,503,459	214,450	5,899	281
FINLAND	58	15	43	66,539,487	1,147,233	55,119,108	950,329	173,564	2,992
FRANCE	706	17	689	776,692,739	1,100,131	408,087,477	578,028	1,597,567	2,263
GERMANY	1,125	18	1,107	1,036,181,315	921,050	573,688,661	509,945	2,076,547	1,846
GREECE	97	7	90	36,555,146	376,857	18,777,778	193,585	81,247	838
IRELAND	19	1	18	3,566,580	187,715	1,978,898	104,153	9,705	511
ITALY	538	16	522	466,696,222	867,465	213,161,552	396,211	751,200	1,396
LUXEMBOURG	3	2	1	1,144,867	381,622	759,576	253,192	547	182
NETHERLANDS	88	5	83	175,583,408	1,995,266	106,192,639	1,206,735	251,078	2,853
PORTUGAL	40	1	39	1,387,230	34,681	441,696	11,042	3,722	93
SPAIN	302	1	301	25,650,323	84,935	11,872,619	39,313	138,708	459
SWEDEN	118	7	111	95,930,615	812,971	55,124,298	467,155	191,513	1,623
UNITED KINGDOM	259	9	250	58,422,880	225,571	50,210,746	193,864	392,255	1,514
Total West	*3,500*	*111*	*3,389*	*2,841,998,077*	*811,999*	*1,553,820,476*	*443,949*	*5,936,811*	*1,696*
BULGARIA	525	64	461	11,454,550	21,818	7,420,067	14,133	181,897	346
CZECH REPUBLIC	26	1	25	6,272,616	241,254	3,429,309	131,897	62,724	2,412
ESTONIA	39	1	38	3,810,394	97,702	1,985,886	50,920	27,175	697
HUNGARY	10	1	9	1,832,768	183,277	2,560,154	256,015	11,457	1,146
LATVIA	9	1	8	1,142,446	126,938	1,016,775	112,975	15,966	1,774
LITHUANIA	14	7	7	4,477,329	319,809	4,520,743	322,910	12,440	889
POLAND	1,109	16	1,093	80,004,161	72,141	71,084,242	64,098	684,474	617
ROMANIA	415	5	410	16,410,256	39,543	7,677,484	18,500	182,876	441
SLOVAKIA	2		2	685,190	342,595	947,238	473,619	2,250	1,125
Total East	*2,149*	*96*	*2,053*	*126,089,710*	*58,674*	*100,641,898*	*46,832*	*1,181,259*	*550*
TOTAL	**5,649**	**207**	**5,442**	**2,968,087,787**	**525,418**	**1,654,462,374**	**292,877**	**7,118,070**	**1,260**

Note: The data refer to 2005.

The noticeable difference between Eastern and Western countries demonstrates what was previously stated. Different historical factors and different development of the two macro-regions have also affected the type of public participation. Many Eastern countries are in fact ex-Communist countries in which the central State's role has had more importance than in Western countries. In such countries an internal administrative subdivision has been made much more recently, so we do not observe the consolidated tradition of local public enterprises that we have in the West. These factors taken at the same time can at least partially justify the differences that have already been pointed out.

Furthermore, it should be highlighted that most Eastern countries are still less developed (e.g., in terms of per capita income) than the Western European countries. According to our data, three of these countries (Bulgaria, Romania and Poland) have higher ownership participation by Central Public Administration. In these countries privatisations began after larger ones had been completed in Western countries, but they have been less effective and less continuous.

Indeed, developing and industrial countries are not equally endowed with factors likely to ensure the success of a privatisation program. The privatisation efforts of most developing countries are inhibited by embryonic financial markets, weak regulatory capacity, and a public sector that accounts for a large share of GDP. Many of them, particularly those with low per capita incomes, lack some of the main ingredients for a successful privatisation, such as capital, entrepreneurs and competent managers (Parker and Kirkpatrick, 2005).

All of these factors partially explain the strong public presence in such companies, with both sectors providing products for the public welfare and more competitive sectors.

Despite what has been said, many studies have shown that in recent years many developing countries have started relevant privatisation programs, especially in telecommunications (Bortolotti *et al.*, 2002), hence reducing the gap with Western countries.

4.3.1 *The weight of public firms on national or regional income*

After having evaluated the diffusion of public enterprises in Europe, emphasizing the sectors to which they belong, subdividing the countries into East and West and then into levels of Government, what remains is to analyse how these enterprises contribute to the economy of their country - that is, to the region in which they are located.

In order to evaluate the impact of public companies at a macro-economic level, their contribution in terms of value added is evaluated both on the *country-GDP* and on the *regional- GDP*.

The data used for this last evaluation are taken from the *Eurostat* site and *World Bank*, and for the measures of value added, from the Amadeus database.

Tables 8, 9 and 10 (2005) demonstrate what has just been stated. At the aggregate level the weight that the public enterprises have

on the country's economy appears evident (4.7% is the incidence of State-owned enterprises' value added on the Country GDP).

Analyzing individual macro-areas, West and East, we note that the percentage of incidence is significantly more important for Western enterprises compared to Eastern ones (4.9% versus 1.5%). The two countries where this is most important are Germany and Finland, with incidence of 8.8% and 9.3% respectively for the Western countries. The most interesting data for the East is that concerning Bulgaria, 4.9%.

Table 9 separates the economic contribution between enterprises with central and local participation, showing as was predictable that the enterprises with central public shareholding make a larger contribution to the country's development in terms of GDP in both Western and Eastern Europe. Table 10, finally, makes the same analysis at the regional level, examining only enterprises with local participation. Their incidence on the regional GDP is studied. Even if the phenomenon is not as strong, countries exist where this data is worthy of attention, such as Germany, Italy and the Netherlands. In some regions of these countries local public enterprises contribute value added to the total regional-GDP: 15% (Niedersachen), 9% (Valle d'Aosta) and 5% (Gelderland).

From this last analysis, we can conclude that public presence in the economies of many European countries still has an important role in terms of participation in creating State and regional-GDP.

Table 8. Impact of GOEs on the economic activity by Country

COUNTRY	Number of GOEs	Value Added th EUR	Gross domestic product (th EUR)*	Value Added/Country Gross Domestic product
West				
AUSTRIA	77	12,397,248	244,858,303	5.063%
BELGIUM	48	10,143,861	296,659,426	3.419%
CYPRUS	1	-11,255	-	
DENMARK	21	96,048	206,971,483	0.046%
FINLAND	58	14,445,530	154,528,042	9.348%
FRANCE	706	102,268,453	1,701,304,389	6.011%
GERMANY	1,125	197,949,572	2,235,940,890	8.853%
GREECE	97		180,165,057	
IRELAND	19	424,994	161,453,520	0.263%
ITALY	538	74,618,740	1,410,015,114	5.292%
LUXEMBOURG	3		29,174,979	
NETHERLANDS	88	33,801,703	499,361,776	6.769%
PORTUGAL	40	79,424	146,643,852	0.054%
SPAIN	302	5,447,104	899,711,972	0.605%
SWEDEN	118	18,003,938	286,146,088	6.292%
UNITED KINGDOM	259	26,307,691	1,759,031,224	1.496%
Total West	*3,500*	*495,973,051*	*10,211,966,114*	*4.857%*
East				
BULGARIA	525	1,036,678	21,318,515	4.863%
CZECH REPUBLIC	26	153,149	99,491,611	0.154%
ESTONIA	39	571,791	10,480,991	5.456%
HUNGARY	10	47,482	87,391,227	0.054%
LATVIA	9	12,301	12,660,926	0.097%
LITHUANIA	14		20,499,821	
POLAND	1,109	5,586,015	242,582,841	2.303%
ROMANIA	415	1,375,672	78,852,306	1.745%
SLOVAKIA	2	210,436	37,129,572	0.567%
Total East	*2,149*	*8,993,524*	*610,407,810*	*1.473%*
TOTAL	**5,649**	**504,966,575**	**10,822,373,924**	**4.666%**

Note: The data refer to 2005. Source: *AMADEUS Database* (Bureau van Dijk) and *World Bank* .

*Data provided by World Bank are presented "in current US$"; with an exchange rate, in 2005, adopted for the Euro conversion equal to 0.80.

Table 9. Impact of GOEs on the economic activity by Country, Central v. Local

COUNTRY	Number of Central GOEs	Value Added th EUR - Central GOEs	Number of Local GOEs	Value Added th EUR - Local GOEs	Gross Domestic Product (th EUR)*	Value Added Central GOEs/Country Gross Domestic Product	Value Added Local GOEs/Country Gross Domestic Product
West							
AUSTRIA	23	10,405,470	54	1,991,778	244,858,303	4.250%	0.813%
BELGIUM	32	9,252,554	16	891,307	296,659,426	3.119%	0.300%
CYPRUS	1	-11,255			-		
DENMARK	13	79,445	8	16,603	206,971,483	0.038%	0.008%
FINLAND	53	12,382,077	5	2,063,453	154,528,042	8.013%	1.335%
FRANCE	598	100,866,530	108	1,401,923	1,701,304,389	5.929%	0.082%
GERMANY	144	117,758,552	981	80,191,020	2,235,940,890	5.267%	3.586%
GREECE	64		33		180,165,057		
IRELAND	19	424,994			161,453,520	0.263%	
ITALY	91	61,385,715	447	13,233,025	1,410,015,114	4.354%	0.939%
LUXEMBOURG	3				29,174,979		
NETHERLANDS	60	27,076,861	28	6,724,842	499,361,776	5.422%	1.347%
PORTUGAL	16	20,228	24	59,196	146,643,852	0.014%	0.040%
SPAIN	51	3,398,756	251	2,048,348	899,711,972	0.378%	0.228%
SWEDEN	117	18,002,412	1	1,526	286,146,088	6.291%	0.001%
UNITED KINGDOM	174	24,065,167	85	2,242,524	1,759,031,224	1.368%	0.127%
Total West	*1,459*	*385,107,506*	*2,041*	*110,865,545*	*10,211,966,114*	*3.771%*	*1.086%*
East							
BULGARIA	520	1,031,890	5	4,788	21,318,515	4.840%	0.022%
CZECH REPUBLIC	23	152,586	3	563	99,491,611	0.153%	0.001%
ESTONIA	33	542,935	6	28,856	10,480,991	5.180%	0.275%
HUNGARY	8	33,171	2	14,311	87,391,227	0.038%	0.016%
LATVIA	9	12,301			12,660,926	0.097%	
LITHUANIA	14				20,499,821		
POLAND	1,076	5,430,127	33	155,888	242,582,841	2.238%	0.064%
ROMANIA	287	1,358,535	128	17,137	78,852,306	1.723%	0.022%
SLOVAKIA	2	210,436			37,129,572	0.567%	
Total East	*1,972*	*8,771,981*	*177*	*221,543*	*610,407,810*	*1.437%*	*0.036%*
TOTAL	**3,431**	**393,879,487**	**2,218**	**111,087,088**	**10,822,373,924**	**3.639%**	**1.026%**

Note: The data refer to 2005.   Source: *AMADEUS Database* (Bureau van Dijk) and *World Bank*.

*Data provided by World Bank are presented "in current US$"; with an exchange rate, in 2005, adopted for the Euro conversion equal to 0.80.

Table 10. Impact of Local GOEs on the economic activity by Region

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
AUSTRIA	Burgenland (A)	2	12,594	5,720,500	0.220%
	Kärnten	3	24,921	14,200,000	0.176%
	Niederösterreich	3	13,486	37,540,400	0.036%
	Oberösterreich	10	283,756	39,667,300	0.715%
	Salzburg	6	319,679	17,394,900	1.838%
	Steiermark	15	862,180	30,838,800	2.796%
	Tirol	12	86,829	21,382,600	0.406%
	Wien	3	388,333	67,298,300	0.577%
BELGIUM	Région de Bruxelles-Capitale	1	11,509	57,948,100	0.020%
	Vlaams Gewest	10	786,023	111,487,200	0.705%
	Waloneye	5	93,775	56,636,500	0.166%
BULGARIA	Severen tsentralen	4	1,129	2,115,300	0.053%
	Yugozapaden	1	3,659	8,852,200	0.041%
CZECH REPUBLIC	Jihovýchod	1		14,296,300	
	Jihozápad	1		10,540,300	
	Praha	1	563	24,121,000	0.002%
DENMARK	Nordjylland	7	16,603	19,690,000	0.084%
	Sjælland	1		23,234,400	
ESTONIA	Estonia	6	28,856	11,209,600	0.257%
FINLAND	Etelä-Suomi	3	2,038,003	89,722,000	2.271%
	Pohjois-Suomi	2	25,450	16,345,200	0.156%
FRANCE	Alsace	15	204,108	46,660,900	0.437%

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
	Aquitaine	5	68,057	76,379,500	0.089%
	Auvergne	1	2,718	30,590,400	0.009%
	Basse-Normandie	1	1,984	33,094,300	0.006%
	Bourgogne	6	3,070	38,740,700	0.008%
	Bretagne	5	18,937	74,695,000	0.025%
	Centre	1	2,714	61,396,300	0.004%
	Champagne-Ardenne	3	2,614	33,908,100	0.008%
	Franche-Comté	2	2,553	27,101,900	0.009%
	Guadeloupe (FR)	1	41,009	7,681,400	0.534%
	Haute-Normandie	2	2,203	44,986,400	0.005%
	Île de France	25	658,216	482,608,300	0.136%
	Lorraine	1	538	52,823,000	0.001%
	Martinique (FR)	1	4,630	7,336,400	0.063%
	Nord - Pas-de-Calais	5	7,028	87,390,900	0.008%
	Pays de la Loire	9	78,696	85,085,700	0.092%
	Poitou-Charentes	2	2,091	39,627,000	0.005%
	Provence-Alpes-Côte d'Azur	1		123,401,000	
	Rhône-Alpes	22	300,757	164,982,700	0.182%
GERMANY	Baden-Württemberg	104	7,279,013	131,253,100	5.546%
	Bayern	128	4,442,103	399,090,900	1.113%
	Berlin	49	2,980,653	78,988,900	3.774%
	Brandenburg	35	807,125	48,144,500	1.676%
	Bremen	5	82,393	24,623,800	0.335%
	Hamburg	7	1,548,573	83,072,000	1.864%
	Hessen	42	3,150,229	200,897,300	1.568%
	Mecklenburg-Vorpommern	41	320,947	31,721,200	1.012%

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
	Niedersachsen	82	29,554,849	191,572,400	15.428%
	Nordrhein-Westfalen	251	27,105,568	487,905,200	5.555%
	Rheinland-Pfalz	44	753,939	97,944,800	0.770%
	Saarland	32	236,043	27,448,400	0.860%
	Sachsen	83	1,311,219	85,279,500	1.538%
	Sachsen-Anhalt	39	242,645	48,292,100	0.502%
	Schleswig-Holstein	25	253,412	68,644,200	0.369%
	Thüringen	14	122,309	44,557,500	0.274%
GREECE	Attiki	4		97,000,500	
	Dytiki Ellada	4		8,041,600	
	Dytiki Makedonia	4		4,219,300	
	Ionia Nisia	1		3,082,300	
	Ipeiros	1		4,377,400	
	Kentriki Makedonia	1		27,702,300	
	Kriti	4		9,166,800	
	Notio Aigaio	5		5,318,100	
	Peloponnisos	1		9,362,600	
	Sterea Ellada	1		10,598,300	
	Thessalia	4		10,102,800	
	Voreio Aigaio	3		2,480,500	
HUNGARY	Közép-Magyarország	2	14,311	40,974,300	0.035%
ITALY	Abruzzo	2	64,492	25,685,100	0.251%
	Calabria	1	8,939	31,389,000	0.028%

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
	Campania	28	977,835	89,708,600	1.090%
	Emilia-Romagna	44	1,047,802	123,709,000	0.847%
	Friuli-Venezia Giulia	13	269,992	32,892,800	0.821%
	Lazio	24	2,181,459	156,746,300	1.392%
	Liguria	16	685,779	39,927,500	1.718%
	Lombardia	85	3,380,602	298,285,200	1.133%
	Marche	19	172,195	36,867,800	0.467%
	Piemonte	43	887,842	115,256,100	0.770%
	Provincia Autonoma Bolzano-Bozen	8	77,938	15,194,900	0.513%
	Provincia Autonoma Trento	13	337,902	14,213,400	2.377%
	Puglia	9	248,110	64,227,400	0.386%
	Sardegna	6	92,744	30,692,900	0.302%
	Sicilia	16	301,815	78,322,400	0.385%
	Toscana	51	740,539	95,504,300	0.775%
	Umbria	6	104,651	19,700,500	0.531%
	Valle d'Aosta/Vallée d'Aoste	3	346,556	3,522,200	9.839%
	Veneto	60	1,305,833	135,171,200	0.966%
NETHERLANDS	Drenthe	3	138,048	11,783,600	1.172%
	Flevoland	1	69,925	8,434,600	0.829%
	Friesland (NL)	1	12,023	16,233,700	0.074%
	Gelderland	4	2,663,239	52,029,700	5.119%
	Groningen	1		22,404,500	
	Noord-Brabant	3	160,319	75,391,800	0.213%
	Noord-Holland	3	1,845,101	95,746,200	1.927%
	Overijssel	1	25,662	29,871,100	0.086%

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
	Prov. Limburg (B)	4	283,070	18,821,800	1.504%
	Utrecht	1		44,288,400	
	Zuid-Holland	6	1,527,455	110,625,900	1.381%
POLAND	Dolnoslaskie	1	776	19,125,800	0.004%
	Malopolskie	5	8,546	17,834,500	0.048%
	Mazowieckie	2		52,254,300	
	Podkarpackie	4	6,533	9,276,300	0.070%
	Pomorskie	4	43,574	13,821,100	0.315%
	Slaskie	2	10,567	32,423,800	0.033%
	Wielkopolskie	7	69,940	23,070,600	0.303%
	Zachodniopomorskie	8	15,952	10,075,500	0.158%
PORTUGAL	Alentejo	1		10,049,700	
	Algarve	1	17,420	6,172,300	0.282%
	Centro (PT)	5	10,205	28,429,900	0.036%
	Lisboa	3	17,153	55,165,600	0.031%
	Norte	13	14,418	41,823,800	0.034%
	Região Autónoma dos Açores (PT)	1		3,018,900	
ROMANIA	Bucuresti - Ilfov	16	5,408	17,197,500	0.031%
	Centru	8	771	9,478,100	0.008%
	Nord-Est	24	744	9,404,700	0.008%
	Nord-Vest	27	2,850	9,568,600	0.030%
	Sud - Muntenia	18	313	10,077,600	0.003%
	Sud-Est	18	940	9,136,100	0.010%

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
	Sud-Vest Oltenia	7	1,286	6,735,200	0.019%
	Vest	10	4,825	7,989,100	0.060%
SPAIN	Andalucia	46	308,414	126,367,800	0.244%
	Aragón	14	49,910	27,853,600	0.179%
	Canarias (ES)	14	80,074	36,766,000	0.218%
	Cantabria	2	10,281	11,360,300	0.090%
	Castilla-la Mancha	1	1,346	31,188,200	0.004%
	Cataluña	45	287,161	170,226,000	0.169%
	Comunidad de Madrid	24	791,683	160,045,800	0.495%
	Comunidad Foral de Navarra	21	77,071	15,354,200	0.502%
	Comunidad Valenciana	19	109,249	88,262,300	0.124%
	Galicia	5	17,733	46,458,900	0.038%
	Illes Balears	2	29,797	22,466,900	0.133%
	La Rioja	2	830	6,654,600	0.012%
	Pais Vasco	52	256,242	56,062,700	0.457%
	Región de Murcia	4	28,557	23,486,300	0.122%
SWEDEN	Västsverige	1	1,526	56,649,900	0.003%
UNITED KINGDOM	Bedfordshire, Hertfordshire	2	608,208	55,979,800	1.086%
	Berkshire, Bucks and Oxfordshire	5	44,411	90,431,700	0.049%
	Cheshire	4	13,674	33,248,400	0.041%
	Cornwall and Isles of Scilly	1	-1,619	10,146,500	-0.016%
	Cumbria	1	7,025	11,221,700	0.063%
	Derbyshire and Nottinghamshire	6	93,417	55,738,700	0.168%
	Devon	2	750	25,840,100	0.003%

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
	Dorset and Somerset	1	11,507	31,368,700	0.037%
	East Anglia	2	130,635	61,412,600	0.213%
	East Wales	4	50,472	31,124,700	0.162%
	East Yorkshire and Northern Lincolnshi	1	125,297	22,095,800	0.567%
	Eastern Scotland	5	99,029	56,425,100	0.176%
	Essex	1		41,345,000	
	Gloucestershire, Wiltshire and Bristol/B	1	9,919	75,293,700	0.013%
	Greater London	5	506,830	346,710,700	0.146%
	Greater Manchester	15	391,815	70,311,400	0.557%
	Herefordshire, Worcestershire and War	1		34,107,500	
	Highlands and Islands	1	2,841		
	Lincolnshire	1		14,799,200	
	North Eastern Scotland	1			
	North Yorkshire	1		20,655,700	
	Northumberland, Tyne and Wear	4	67,810	36,849,900	0.184%
	Shropshire and Staffordshire	1		35,117,400	
	South Western Scotland	1		61,427,700	
	South Yorkshire	3	7,571	29,975,300	0.025%
	Surrey, East and West Sussex	2		80,732,300	
	Lincolnshire	1		14,799,200	
	North Eastern Scotland	1			
	North Yorkshire	1		20,655,700	
	Northumberland, Tyne and Wear	4	67,810	36,849,900	0.184%
	Shropshire and Staffordshire	1		35,117,400	
	South Western Scotland	1		61,427,700	

COUNTRY	REGION	Number of GOEs*	Value Added th EUR	Regional Gross Domestic Product (th EUR)	Value Added/Regional Gross Domestic Product
	South Yorkshire	3	7,571	29,975,300	0.025%
	Surrey, East and West Sussex	2		80,732,300	
	Tees Valley and Durham	1	14,207	24,927,300	0.057%
	West Midlands	7	39,753	73,204,100	0.054%
	West Wales and The Valleys	3	1,098	37,286,800	0.003%
	West Yorkshire	2	17,874	59,207,900	0.030%
TOTAL		**2,218**	**111,087,088**	**9,181,559,500**	**1.210%**

*Number of GOEs by at least one public entity in the region
Note: The data refer to 2005.
Source: AMADEUS Database (Bureau van Dijk) and Eurostat .

Considering what has just been said, a final interesting evaluation consists in verifying whether Government owned enterprises (or local Government owned enterprises) are a way to support weak economies. In other words, is there a correlation between the public presence and per capita income levels?

Having in fact demonstrated that enterprises with public participation act positively on the country's economic development (on the region in which these operate), can their presence within the markets be considered a market tool for re-launching and sustaining the economy, above all that of less developed countries?

To demonstrate this we tested whether there were correlations between the various countries' per capita GDP (value used to test the richness of the country itself) and the value added of the enterprises with public participation, and what sign this would have.[21]

The graph[22] below shows that this hypothesis is totally disproved. As we can see from the upward curve of the line, there is a growing relationship between a country's wealth and the value added brought by enterprises with public shareholding. The contribution to the country's economy made by enterprises with public shareholding grows in relation to the country's level of development. The more developed a country

---

[21] This value has been related to the data regarding the national GDP in order to make the analysis and comparison of the countries as homogenous as possible.
[22] Source: *AMADEUS Database* (Bureau van Dijk) and *World Bank*. The data refer to year 2005.

is, and therefore the richer it is in terms of per capita GDP, the higher the contribution of enterprises with public shareholding.[23]

It is not easy to give a cause-effect explanation for this because multiple factors can help bring about this result. From the data it appears evident that public shareholding in enterprises is not a factor connected to situations of economic weakness. Whether the enterprises in public hands reinforce local economies, or whether on the other hand the high level of local earnings favours the creation of public enterprises, is left for future analyses.

At the same time, the analysis strengthens what has been stated in other parts of this work - that is, that the decision of public entities to share in or retain complete ownership of enterprises is based not only on this being a valid means for sustaining the economy, but often this appears to be a genuine market strategy that public entities themselves decide to adopt.

---

[23] The correlation index existing between the two variables is equal to 0.32.

Correlation beween GDP per capita and Value added GOEs/National GDP

Source: *AMADEUS Database* (Bureau van Dijk) and *World Bank*.

4.4 What do Government owned firms do?

As we have already stressed, Government owned enterprises are active in numerous sectors. For some of these the public presence is totally traditional (namely, public services) but in several cases the public presence is in sectors open to competition, where the commitment of public resources may seem less obvious. To understand these phenomena a bit better, we should consider to what extent this apparent "distortion" of the public shareholders' mission may be considered specific to particular countries.

The sector analysis demonstrated two very important facts. The first is represented by a strong local public shareholding within the utilities sector. This fact is rather well-known. It is known in fact that the local public entities participate in enterprises that offer public utility services. The second aspect to emphasize is the strong public presence, both local and central, within the services sector, and specifically within the "other services" - business services and engineering and management services. The sector in which the central State is present to a higher degree is that of manufacturing. These last data were absolutely unexpected, since the manufacturing and services sectors belong to more competitive and varied markets, markets in which goods of public utility that would justify such a important public presence are not offered.

In absolute terms, however, the finance sector absorbs 7% of the total local public participation, thus turning out to be the most representative of the phenomenon of municipal capitalism (after the aggregate sectors of utilities and services).

Table 11 shows the role carried out by the public component locally and centrally in terms of percentages within each sector (2005).

The most significant data are those regarding the percentage value of total assets of the local component over the total. The sectors in which this value has most significance are highways and local transportation. If for the second sector such a high value was rather predictable, the same cannot be said for highways, which are usually managed or co-participated in by the central State.

Other sectors in which local entities represent an important component are, as we have already said, business services (62%) and specific utility sectors like environmental services, multi-

utilities and water services (93, 94, 96 per cent respectively). The local institution presence in health services (92%) is also strongly significant.

For other sectors, in term of total assets the local presence is much less significant. It is enough to look at the data regarding gas and electricity to note what we have just said. Considering all the companies including those with central participation, this phenomenon can be explained by the fact that for some sectors the central presence is absolutely logical. All the largest State enterprises are gathered within the gas and electricity sector: for example ENEL and ENI for Italy, EDF and Gas de France for France. Another example is Poland, where it can be seen that all the enterprises in these two sectors are in State hands.

The phenomenon of aggregations can thus give very distorted results but since our objective is to make a sector-based comparison of public participation between countries, it would be incorrect not to take into consideration the enterprises that have central State participation.

Finally, analyzing the number of aggregate employees (slightly more than 7 million people), we see that the transportation sector overall absorbs almost 17%, while that of utilities is 13%. Within these sectors, the railways sector is the one with the highest labor intensity, followed by local public transportation. Within utilities, the sector with the highest number of employees is that of electricity.

Table 11. GOEs by Sector, Central v. Local, %

SECTOR	Number of GOEs	of which owned by Central Govt.	of which owned by Local Govt.	% Total	% Central Govt.	% Local Govt.	TOTAL ASSETS th EUR % on total Total	TOTAL ASSETS th EUR % on total Central Govt.	TOTAL ASSETS th EUR % on total Local Govt.	OPERATING REVENUES th EUR % on total Total	OPERATING REVENUES th EUR % on total Central Govt.	OPERATING REVENUES th EUR % on total Local Govt.	NUMBER OF EMPLOYEES % on total Total	NUMBER OF EMPLOYEES % on total Central Govt.	NUMBER OF EMPLOYEES % on total Local Govt.
AGRICULTURE	96	87	9	1.74%	1.58%	0.16%	0.22%	99.24%	0.76%	0.16%	98.12%	1.88%	0.58%	98.77%	1.23%
COMMUNICATIONS	90	76	14	1.63%	1.38%	0.25%	10.57%	98.12%	1.88%	9.55%	97.95%	2.05%	8.69%	97.95%	2.05%
CONSTRUCTIONS	206	128	78	3.74%	2.32%	1.41%	0.46%	32.82%	67.18%	0.46%	39.45%	60.55%	0.90%	57.38%	42.62%
FINANCE	676	268	408	12.26%	4.86%	7.40%	5.67%	56.52%	43.48%	3.52%	76.06%	23.94%	3.60%	83.55%	16.45%
MANUFACTURING	898	801	97	16.29%	14.53%	1.76%	20.60%	75.98%	24.02%	26.76%	73.70%	26.30%	22.00%	74.41%	25.59%
OIL and MINING	94	88	6	1.71%	1.60%	0.11%	12.22%	64.76%	35.24%	20.59%	82.60%	17.40%	6.44%	83.87%	16.13%
POSTAL SERVICES	20	20		0.36%	0.36%	0.00%	11.72%	100.00%	0.00%	6.13%	100.00%	0.00%	19.25%	100.00%	0.00%
TRADE	363	277	86	6.58%	5.02%	1.56%	1.49%	93.60%	6.40%	2.81%	93.81%	6.19%	1.72%	81.36%	18.64%
TRANSPORTATIONS - of which	*956*	*649*	*307*	*17.34%*	*11.77%*	*5.57%*	*11.74%*	*85.30%*	*14.70%*	*8.50%*	*85.18%*	*14.82%*	*16.84%*	*82.61%*	*17.39%*
AIRPORTS	69	19	50	1.25%	0.34%	0.91%	1.01%	40.79%	59.21%	0.65%	37.66%	62.34%	1.18%	24.48%	75.52%
HIGHWAYS	48	31	17	0.87%	0.56%	0.31%	0.28%	6.16%	93.84%	0.14%	8.65%	91.35%	0.20%	43.23%	56.77%
LOCAL TRANSPORTS	338	185	153	6.13%	3.36%	2.78%	0.84%	29.56%	70.44%	0.78%	29.30%	70.70%	2.69%	37.35%	62.65%
RAILWAYS	48	29	19	0.87%	0.53%	0.34%	8.40%	99.37%	0.63%	5.05%	98.85%	1.15%	10.23%	98.72%	1.28%
TRANSPORTATION BY AIR	15	14	1	0.27%	0.25%	0.02%	0.50%	99.95%	0.05%	0.77%	99.80%	0.20%	1.00%	99.86%	0.14%
TRANSPORTATION SERVICES	189	163	26	3.43%	2.96%	0.47%	0.16%	88.45%	11.55%	0.48%	96.61%	3.39%	0.62%	96.32%	3.68%
TRUCKING AND WAREHOUSING	170	149	21	3.08%	2.70%	0.38%	0.15%	66.10%	33.90%	0.42%	92.61%	7.39%	0.53%	97.72%	2.28%
WATER TRANSPORTATION	79	59	20	1.43%	1.07%	0.36%	0.39%	62.08%	37.92%	0.20%	69.45%	30.55%	0.40%	81.75%	18.25%
SERVICES - of which	*1,349*	*737*	*612*	*24.47%*	*13.37%*	*11.10%*	*3.80%*	*68.86%*	*31.14%*	*3.88%*	*71.06%*	*28.94%*	*6.96%*	*64.61%*	*35.39%*
BUSINESS SERVICES	362	172	190	6.57%	3.12%	3.45%	0.93%	37.52%	62.48%	1.21%	65.06%	34.94%	1.40%	62.43%	37.57%
ENGINEERING & MGMT SERVICES	455	314	141	8.25%	5.70%	2.56%	2.11%	92.88%	7.12%	1.62%	92.13%	7.87%	2.02%	90.78%	9.22%
HEALTH SERVICES	154	93	61	2.79%	1.69%	1.11%	0.28%	7.98%	92.02%	0.42%	8.95%	91.05%	1.76%	27.81%	72.19%
OTHER SERVICES	378	158	220	6.86%	2.87%	3.99%	0.49%	58.78%	41.22%	0.63%	69.86%	30.14%	1.77%	72.94%	27.06%
UTILITIES - of which	*765*	*216*	*549*	*13.88%*	*3.92%*	*9.96%*	*21.51%*	*70.75%*	*29.25%*	*17.65%*	*65.69%*	*34.31%*	*13.02%*	*71.00%*	*29.00%*
ELECTRICITY	298	123	175	5.41%	2.23%	3.17%	17.53%	77.44%	22.56%	13.65%	72.88%	27.12%	9.26%	81.11%	18.89%
ENVIRONMENTAL SERVICES	143	18	125	2.59%	0.33%	2.27%	0.34%	7.41%	92.59%	0.30%	11.20%	88.80%	0.56%	6.51%	93.49%
GAS	109	20	89	1.98%	0.36%	1.61%	1.86%	82.47%	17.53%	2.10%	72.94%	27.06%	1.63%	87.34%	12.66%
MULTIUTILITIES	78	35	43	1.41%	0.63%	0.78%	0.81%	6.23%	93.77%	0.88%	6.30%	93.70%	0.84%	18.42%	81.58%
WATER SERVICES	137	20	117	2.49%	0.36%	2.12%	0.97%	3.74%	96.26%	0.72%	3.76%	96.24%	0.73%	15.78%	84.22%
TOTAL	**5,513**	**3,347**	**2,166**	**100%**	**60.71%**	**39.29%**	**100%**	**78.47%**	**21.53%**	**100%**	**79.45%**	**20.55%**	**100%**	**82.68%**	**17.32%**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

A final evaluation concerns a more specific analysis of sectors that are competitive in nature (communications (tlc), construction, manufacturing, services and trade). As we have already stated, public shareholding in these sectors is widespread. Analyzing the individual countries, we can note (table 12) that this phenomenon is principally rooted in the most developed countries. With the exception of Poland, where we can see a high number of public enterprises in each of these sectors (682), and of Romania (248), the other countries in which this phenomenon stands out are: France, Germany, Italy, Spain and the UK. These present a total number of public enterprises in these sectors of, respectively: 302 (out of a total of 706), 432 (out of 1,125), 203 (out of 538), 147 (out of 302) and 157 (out of 259).

If for the emerging countries this strong public presence can be justified as a possible stimulus to economic development, in already strongly competitive countries it is not easy to find a valid explanation.

Table 12. Competitive Sectors by Country

COUNTRY	COMMUNICATION	CONSTRUCTION	MANUFACTURING	SERVICES	TRADE INDUSTRY	TOTAL
AUSTRIA	2	4	4	23	3	36
BELGIUM	3	1	9	7	5	25
BULGARIA	2	26	203	105	48	384
CZECH REPUBLIC			3	5		8
DENMARK	1	1	4		4	10
ESTONIA	4		2	8	8	22
FINLAND	1	2	13	11	4	31
FRANCE	11	17	63	176	35	302
GERMANY	3	31	34	344	20	432
GREECE	3	8	15	37	7	70
HUNGARY	1	1	3	2	2	9
IRELAND			1	2		3
ITALY	6	18	41	89	49	203
LATVIA	1		1	1	3	6
LITHUANIA	2	1	1		2	6
NETHERLANDS	3	7	10	11	7	38
POLAND	22	45	332	214	69	682
PORTUGAL		1	7	12	2	22
ROMANIA	8	19	99	63	59	248
SLOVAKIA			1			1
SPAIN	4	17	11	101	14	147
SWEDEN	3		9	50	4	66
UNITED KINGDOM	10	7	33	89	18	157
Total	**90**	**206**	**898**	**1,349**	**363**	**2,906**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

4.5 Central v. local governments ownership

The analysis carried out in this work not only allows us to verify how widespread the public presence is within the European scenario, but it also allows us to carry out a focused evaluation of what has been defined as "municipal capitalism", that is, of the role that local Governments have in the various countries' economies. This distinction is in fact fundamental because, as has already been stated in the preceding sections, the phenomenon of having two levels of Government can change the meaning of the results, especially for particular sectors. In some sectors we have seen that the weight of central shareholding is much more important than local participation (rarely does the contrary occur, except in the case of utilities).

The two levels of Government have a very different influence in different countries. For example, while in Poland and France the large majority of public presence refers to the central Government, in Germany the distinct superiority of local Governments is shown, at least in the number of companies in the sample (of 1,125 companies, 981 are participated in by local entities). The same is true for Italy and Spain, countries in which local ownership greatly outnumbers central public shareholding.

The countries in which central participation is most prevalence are principally those of Eastern Europe, first of all Poland as has already been pointed out (of 1,109 public enterprises, 1,076 are central and only 33 local), followed by Bulgaria (520 central versus 5 local) and Romania (287 central versus 128 local).

As we saw in the previous table 11, numerically the enterprises with local shareholders (39%) have a quite high impact on the total number of Government owned enterprises (GOEs). On the

other hand, in terms of values of total assets and employees, the central component is more important, with percentage values respectively of 78% and 83%. Another important consideration regards the labour intensity value, which is always subdivided between the two components of Government.

Table 13 shows that overall labour intensity is higher for enterprises with Central rather than local shareholding (2.53 – 1.92). This result is strange because it shows that at the European level the local presence in the economy is not always justified as a means of supporting employment, as would normally have been expected.

Table 13. Labour intensity, Central v. Local

COUNTRY	Number of GOEs	TOTAL ASSETS th EUR	TOTAL NUMBER OF EMPLOYEES	Total Number of Employees/Total assets Mln EUR	TOTAL ASSETS th EUR - CENTRAL GOEs	NUMBER OF EMPLOYEES - CENTRAL GOEs	Central Number of Employees/Total assets Mln EUR	TOTAL ASSETS th EUR - LOCAL GOEs	NUMBER OF EMPLOYEES - LOCAL GOEs	Local Number of Employees/Total assets Mln EUR
West Countries										
AUSTRIA	77	51,711,994	142,987	2.77	41,639,014	111,204	2.67	10,072,980	31,783	3.16
BELGIUM	48	38,689,917	117,908	3.05	33,593,776	110,297	3.28	5,096,141	7,611	1.49
CYPRUS	1	323,256	2,364	7.31	323,256	2,364	7.31			
DENMARK	21	6,922,098	5,899	0.85	6,870,492	5,763	0.84	51,606	136	2.64
FINLAND	58	66,539,487	173,567	2.61	59,066,901	146,343	2.48	7,472,586	27,221	3.64
FRANCE	706	776,692,739	1,597,571	2.06	761,514,491	1,585,150	2.08	15,178,248	12,417	0.82
GERMANY	1,125	1,036,181,315	2,076,547	2.00	576,306,339	1,308,885	2.27	459,874,976	767,662	1.67
GREECE	97	36,555,146	81,247	2.22	36,213,480	74,736	2.06	341,666	6,511	19.06
IRELAND	19	3,566,580	9,705	2.72	3,566,580	9,705	2.72			
ITALY	538	466,696,222	751,200	1.61	390,425,038	547,069	1.40	76,271,184	204,131	2.68
LUXEMBOURG	3	1,144,867	547	0.48	1,144,867	547	0.48			
NETHERLANDS	88	175,583,408	251,078	1.43	140,208,039	211,038	1.51	35,375,369	40,040	1.13
PORTUGAL	40	1,387,230	3,722	2.68	216,785	1,517	7.00	1,170,445	2,205	1.88
SPAIN	302	25,650,323	138,708	5.41	7,922,069	97,561	12.32	17,728,254	41,147	2.32
SWEDEN	118	95,930,615	191,513	2.00	95,920,135	191,412	2.00	10,480	101	9.64
UNITED KINGDOM	259	58,422,880	392,255	6.71	50,428,686	335,010	6.64	7,994,194	57,245	7.16
Total West	*3,500*	*2,841,998,077*	*5,936,818*	*2.09*	*2,205,359,948*	*4,738,601*	*2.15*	*636,638,129*	*1,198,210*	*1.88*
Est Countries										
BULGARIA	525	11,454,550	181,897	15.88	11,432,157	180,741	15.81	22,393	1,156	51.62
CZECH REPUBLIC	26	6,272,616	62,724	10.00	6,021,129	61,936	10.29	251,487	788	3.13
ESTONIA	39	3,810,394	27,175	7.13	3,699,260	24,145	6.53	111,134	3,030	27.26
HUNGARY	10	1,832,768	11,457	6.25	600,894	3,317	5.52	1,231,874	8,140	6.61
LATVIA	9	1,142,446	15,966	13.98	1,142,446	15,966	13.98			
LITHUANIA	14	4,477,329	12,440	2.78	4,477,329	12,440	2.78			
POLAND	1,109	80,004,161	684,408	8.55	78,899,153	673,147	8.53	1,105,008	11,327	10.25
ROMANIA	415	16,410,256	182,876	11.14	16,055,697	174,713	10.88	354,559	8,163	23.02
SLOVAKIA	2	685,190	2,250	3.28	685,190	2,250	3.28			
Total Est	*2,149*	*126,089,710*	*1,181,193*	*9.37*	*123,013,255*	*1,148,655*	*9.34*	*3,076,455*	*32,604*	*10.60*
TOTAL	**5,649**	**2,968,087,787**	**7,118,011**	**2.40**	**2,328,373,203**	**5,887,256**	**2.53**	**639,714,584**	**1,230,814**	**1.92**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table 14 allows us to evaluate how the local and central presence in each country reacts on the West and East totals. In terms of number of enterprises and in terms of total assets, the country that contributes the most to the central European presence is Poland among the Eastern countries (55% and 64% respectively) and France among the Western countries (41% and 35%). The country where municipal capitalism appears particularly common among Western countries is Germany (48% and 72%), as was partially predictable. Among Eastern European countries Romania accounts for about 72% of local GOEs of the area. For Western countries the figure reflects both the federal structure of the German State and its political culture, where State intervention is not necessarily seen as a pathology or something totally residual. As local Governments have a great deal of management autonomy and are usually considered natural key figures on the economic scene, the presence of local GOEs is more important not only than the presence of enterprises controlled by the central Government, but also compared to the local presence in countries with different administrative structures.

The same result for Romania is more difficult to explain because in Romania local entities do not have so much autonomy to justify such a large local Government presence in the enterprises.

The second Western country showing a strong local presence is Italy. This data emphasize what has already been said in previous sections - although Italy is a country with a centralised structure, it confers many powers to lower levels of Government.

Table 14. Central and Local incidence on the total, by Country

COUNTRY	Number of GOEs	Total Assets	Central Number of GOES	Total Assets of Central GOEs	Number of Employees of Central GOEs	% of Central Number of GOEs	% of Central Total Assets	% of Central Number of Employees	Local Number of GOES	Total Assets Local GOEs	Number of Employees of Local GOEs	% of Local Number of GOEs	% of Local Total Assets	% of Local Number of Employees
West Countries														
AUSTRIA	77	51,711,994	23	41,639,014	111,204	1.58%	1.89%	2.35%	54	10,072,980	31,783	2.65%	1.58%	2.65%
BELGIUM	48	38,689,917	32	33,593,776	110,297	2.19%	1.52%	2.33%	16	5,096,141	7,611	0.78%	0.80%	0.64%
CYPRUS	1	323,256	1	323,256	2,364	0.07%	0.01%	0.05%						
DENMARK	21	6,922,098	13	6,870,492	5,763	0.89%	0.31%	0.12%	8	51,606	136	0.39%	0.01%	0.01%
FINLAND	58	66,539,487	53	59,066,901	146,343	3.63%	2.68%	3.09%	5	7,472,586	27,221	0.24%	1.17%	2.27%
FRANCE	706	776,692,739	598	761,514,491	1,585,150	40.99%	34.53%	33.45%	108	15,178,248	12,417	5.29%	2.38%	1.04%
GERMANY	1,125	1,036,181,315	144	576,306,339	1,308,885	9.87%	26.13%	27.62%	981	459,874,976	767,662	48.06%	72.23%	64.07%
GREECE	97	36,555,146	64	36,213,480	74,736	4.39%	1.64%	1.58%	33	341,666	6,511	1.62%	0.05%	0.54%
IRELAND	19	3,566,580	19	3,566,580	9,705	1.30%	0.16%	0.20%						
ITALY	538	466,696,222	91	390,425,038	547,069	6.24%	17.70%	11.54%	447	76,271,184	204,131	21.90%	11.98%	17.04%
LUXEMBOURG	3	1,144,867	3	1,144,867	547	0.21%	0.05%	0.01%						
NETHERLANDS	88	175,583,408	60	140,208,039	211,038	4.11%	6.36%	4.45%	28	35,375,369	40,040	1.37%	5.56%	3.34%
PORTUGAL	40	1,387,230	16	216,785	1,517	1.10%	0.01%	0.03%	24	1,170,445	2,205	1.18%	0.18%	0.18%
SPAIN	302	25,650,323	51	7,922,069	97,561	3.50%	0.36%	2.06%	251	17,728,254	41,147	12.30%	2.78%	3.43%
SWEDEN	118	95,930,615	117	95,920,135	191,412	8.02%	4.35%	4.04%	1	10,480	101	0.05%	0.00%	0.01%
UK	259	58,422,880	174	50,428,686	335,010	11.93%	2.29%	7.07%	85	7,994,194	57,245	4.16%	1.26%	4.78%
Total West	**3,500**	**2,841,998,077**	**1,459**	**2,205,359,948**	**4,738,601**	**100%**	**100%**	**100%**	**2,041**	**636,638,129**	**1,198,210**	**100%**	**100%**	**100%**
Est Countries														
BULGARIA	525	11,454,550	520	11,432,157	180,741	26.37%	9.29%	15.74%	5	22,393	1,156	2.82%	0.73%	3.55%
CZECH REPUBLIC	26	6,272,616	23	6,021,129	61,936	1.17%	4.89%	5.39%	3	251,487	788	1.69%	8.17%	2.42%
ESTONIA	39	3,810,394	33	3,699,260	24,145	1.67%	3.01%	2.10%	6	111,134	3,030	3.39%	3.61%	9.29%
HUNGARY	10	1,832,768	8	600,894	3,317	0.41%	0.49%	0.29%	2	1,231,874	8,140	1.13%	40.04%	24.97%
LATVIA	9	1,142,446	9	1,142,446	15,966	0.46%	0.93%	1.39%						
LITHUANIA	14	4,477,329	14	4,477,329	12,440	0.71%	3.64%	1.08%						
POLAND	1,109	80,004,161	1,076	78,899,153	673,147	54.56%	64.14%	58.60%	33	1,105,008	11,327	18.64%	35.92%	34.74%
ROMANIA	415	16,410,256	287	16,055,697	174,713	14.55%	13.05%	15.21%	128	354,559	8,163	72.32%	11.52%	25.04%
SLOVAKIA	2	685,190	2	685,190	2,250	0.10%	0.56%	0.20%						
Total Est	**2,149**	**126,089,710**	**1,972**	**123,013,255**	**1,148,655**	**100%**	**100%**	**100%**	**177**	**3,076,455**	**32,604**	**100%**	**100%**	**100%**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

4.5.1 The case of Germany

At this point in the analysis, it is absolutely necessary to evaluate the theme of municipal capitalism in Germany in a more profound way. As already emphasized in preceding sections, Germany among all the countries analysed is the most important in terms of shareholding by local public entities within enterprises.

This phenomenon has been partially associated with and justified in terms of Germany's institutional structure. Since Germany is a federally structured country, the high financial autonomy and larger role of regions and municipalities may rather naturally lead to a more determinant role for enterprises as well. Taking this as a given, we must however ask why public shareholding in Germany today is so important, especially on the local level.

From the relevant economic literature, it is well known that Germany, like the U.K., embraced important privatisation processes during the 1900s, in particular after the fall of the Berlin Wall. Above all, unification with ex-East Germany forced the German Government to undergo a profound restructuring process.

Furthermore, these phenomenon were not new only at the end of the century. In testimony from 2006, as in the mid-1930's, many of the German enterprises already in Government hands were privatised. This mainly concerned ex-East German enterprises. These belonged to a wide range of sectors: steel, mining, banking, local public utilities, shipyard, ship-lines, railways, etc.

In Germany between 1930 and 1940 important State sales were carried out in several sectors:

- Railways: in the 1930s the *Deutsche Reichsbahn* (German Railways) was the largest single public enterprise in the world and it was sold for 224 million;
- Steel and Mining: in 1932 the German Government owned more than 52% of shares of *Gelsenkirchen Bergau* (a big mining enterprise) but within a few years the Government majority stake was converted into a stake of less than 25%, no longer sufficient under German law to give the Government any privileges in enterprise control;
- Shipping lines: in 1936 publicly owned shares of the *Hamburg-SüdAmerika* shipping enterprise were sold;
- Local public utilities: privatisation of local public utilities was very important in 1935.

One of the main tasks in the transformation, especially of the East German economy, was thus privatisation. Things changed after World War II. In the German Democratic Republic (GDR, East Germany), in accordance with the Socialist creed there was virtually no private property or means of production. Between 1945 and 1949 the Soviet occupation forces in East Germany had already re-nationalised important parts of the land owned by the former aristocracy. In 1972 almost 100 per cent of productive capital was State owned. Enterprises were organised as State-owned enterprises (*Volkseigener Betrieb*) or as large conglomerates (*Kombinate*) that were characterised by vertical and horizontal integration.

At the end of 1900, the consensus was that the form of property had to be changed. Economists of the property rights school stressed that the form of property rights in State-owned enterprises of Socialist countries was a major factor explaining

the inefficiency of centrally planned economies. Thus, privatisation seemed to be inevitable.

The mode of privatisation was different in West and East Germany.

Western experiences with privatisation since the 1980s were limited to a few public companies which underwent a long restructuring period before they were sold on the advanced capital market. This was not possible in the case of East Germany, where these preconditions did not exist.

The different level of economic development in East and West Germany was the main reason for the different approach to the process of privatisation taken by these Governments. Many scholars have analysed how this restructuring program was carried out in the two German areas and in particular in former Socialist Germany.

Dyck and Wruck (1998) study the role that organizational structure and contract design played in resolving economic and political problems that arose during Germany's privatisation process.

In November 1989 (after the fall of the Berlin Wall) a German privatisation agency called *Treuhand* was established by the East German Government to create and manage State-owned enterprises. In 1990 the *Treuhand* owned about 12,400 eastern enterprises with four million employees – making it the largest holding company in the world. Under the East German economic system, the Government controlled production through centralised planning and financial systems.

The enterprises managed by this agency often found themselves working with little profitability or even at a loss. Therefore, the original expectation that the *Treuhand* could generate large revenue soon proved wrong. To increase efficiency, the *Treuhand* was thus forced to carry out major privatisation programs. By the end of 1994 the agency had entered into over 14,388 privatisation transactions that included 1.5 million job guarantees and 207 billion in investment guarantees. Although the bidding was open to all buyers, 74.1% of privatised enterprises were purchased by West German buyers, 20% were purchased by East German buyers, and only 5.9% were purchased by foreign buyers (Dyck and Wruck, 1998). By December 31, 1994 only sixty companies remained unsold. Nearly half of the companies that the *Treuhand* gained ownership of in 1990 are still in business today as private entities.

Traditional economic measures, like the growth rate and GDP of East Germany, indicate *Treuhand*'s success. With an annual growth rate that reached over 9% in late 1995, East Germany has become one of the most rapidly expanding regions in Eastern Europe (Stack, 1997).

As the economic literature shows, the privatisation process that characterised Germany essentially regarded East Germany. This fact is rather understandable considering the lower level of development of this part of Germany compared to West Germany, as well as other political and ideological characteristics related to the history of ex-East Germany.

It now makes sense to re-evaluate our data in light of what has just been said.

The fact that even today many enterprises appear to be public property might be linked to an unfinished process of

privatisation in East Germany - that is, to an inheritance of Communist power in Germany that appears rather similar to other economies in transition such as Hungary or Poland.

Analyzing our data, it appears evident that this hypothesis is entirely unfounded. Numerically, most enterprises with public participation, especially local public participation, are located in the Western regions of Germany. If this fact is in itself already surprising, the data regarding the impact of these enterprises in terms of value added to the GDP is even more so.

Distinguishing the German regions on the basis of their past membership in one or another area in which the country was sub-divided, and grouping the enterprises with local public participation in terms of whether they belong to East or West Germany, it can be seen that the contribution of enterprises operating in ex-West Germany in terms of value added is vastly superior to that of enterprises in the East (4% versus 1%).

This result demonstrates that in Germany the large public presence within enterprises should not be associated with what remains of this country's past history, but rather interpreted as a genuine market strategy pursued by local Governments. In Germany, shareholding in enterprises appears as a conscious choice by Governments, which on the basis of accurate economic evaluations must have considered it more advantageous to continue to share in or directly possess certain enterprises rather than cede them to private individuals. Thus, if at first privatisation processes were carried out to improve the German economy, particularly in East Germany, more recently this process by local German Governments has changed direction. Local Government shareholding in public enterprises has turned out to be a genuine market tool for pursuing economic

advantages. This can mean either that the enterprises in which they participate show positive results and thus represent sources of earnings for Governments (as shown by our data - enterprises with local public participation in Germany have a positive and important impact on the GDP of regions where they operate), or it may be more convenient to offer certain services by enterprises with the participation of public entities rather than to let private individuals operate directly. It may even be that some sectors in which these enterprises operate are of strategic significance and so it is simpler and more feasible to offer such goods and services through Government shareholding.

5. An analysis of the financial and operating performance

5.1 Introduction

The analysis carried out up to this point has allowed us to evaluate how enterprises with public shareholding are distributed within the European context and among the various sectors. The comparative analysis of enterprises having central and local public shareholding, the sectors involved and the diverse presence of these enterprises within Europe have already provided an interesting picture of the current situation.

We now turn to the main financial magnitudes, such as total assets, number of employees and operating revenues. By constructing appropriate financial indices we can see how this very considerable portion of the productive system performs. This is relevant because claims that enterprises in public hands cause financial losses are quite common.

Comparing how these enterprises perform in different countries and sectors will also help to highlight whether specific countries are particularly "good" or "bad" in running them, or at least to identify some potentially problematic aspects. Although profitability *per se* is obviously not a criterion for judging whether an enterprise in public hands is operating well (especially in public services sectors) these figures are nonetheless relevant at least in comparing different ways that these enterprises are managed in different countries.

The AMADEUS databank, besides providing data on enterprise size (in terms of total assets, revenues and employees), also provides data on financial performance, although much missing data has been found.

Using the economic and ownership data, some indicators of profitability of management efficiency and patrimonial solidity of GOEs have been created.

From the various possible measures of profitability we have chosen two.

The first one is EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization). This value takes into consideration an enterprise's gross earnings from sales and ordinary management, including interests (financial management), taxes (fiscal management), depreciation of goods and amortizations.

Analogous information can be obtained by considering Net Income per employee.

Another index that we have analyzed is the ratio between the labour cost and operating revenues (indicating the portion of revenues absorbed by the wage bill)[24].

The choice of using these financial indicators is to some extent arbitrary, in that many other indices could be appropriate for the same kind of evaluations. The decision to use total assets, operating revenues and number of employees as indicators of enterprise size is quite natural given the problem at hand. We need to check whether differences in performance or financial choice are due to company size. Several papers use similar approaches. For example, Megginson, Nash and van

---

[24] This ratio can under specific assumptions about prices be interpreted as an index of productivity.

Randenborgh (1994), D'Souza and Megginson (1999) and Bortolotti and Milella (2006) use Total employees; Bortolotti and Pinotti (2003) use GDP; Bortolotti and Faccio (2004) use end of year market capitalization.

Since our sample is made up mainly of unlisted enterprises, this last variable (capitalization in the market) cannot be used because it is a measure typical only of listed enterprises.

The basic reason for which EBITDA and Net Income have been chosen is that we wish to remain as focused as possible on the core management of the enterprises in our sample, to avoid including other aspects of company management such as financial and extraordinary operations which in some way would distort our results.

Finally, in terms of financial choices, the debt ratio (the ratio between total liabilities and total assets) was used. The values of this index may reflect both factors of demand, external funds and supply. However, as we compare enterprises in the same sector we can generally assume that financial choices would be relatively similar. Differences in this ratio should be due to an enterprise's better (or worse) ability to use financial markets (and to develop financial markets in a specific country).

5.2 A preliminary overview

Let us start from an aggregate overview of the data available.

Table 15 presents average values (2005) of the main financial indexes, sub-divided into the two European macro-regions and within these regions, between countries.

From the aggregate analysis of macro-regions, strong differences emerge between Eastern and Western European countries.[25] The former show a much lower average labour cost compared to the data from the West (11.63 Th. Euros v. 57.54 Th. Euros). For relative profitability values, the West presents higher average values (11.98 v. 7.68 values of EBITDA Margin, while 159.50 Th. Euros v. 19.92 Th. Euros Net income per employee). While the labour cost data are hardly surprising, the profitability data are probably more interesting.

This means that on average public enterprises in the Western countries are more profitable and efficient compared to public enterprises in Eastern countries, but a higher percentage of earnings is used to cover costs connected to salaries.

In terms of debt ratio, on the other hand, the two macro-regions have very similar average values and, considered separately, are very close to the total average (0.76 v. 0.73).

This last factor is particularly interesting since successive analyses will reach different conclusions. The reason for this lies in the possible phenomenon of aggregation, which is found by

---

[25] Here and below, we must recall that many data on enterprises in Eastern countries were missing from the databank. Some caution is always needed in interpreting the data from these countries.

Table 15. Selected Performance Indicators, by Country

Geographical Ownership	Number of GOEs	Total Assets th EUR	Average ROA	Average EBITDA Margin (%)	Average Operat. Revenues per employee Th EUR	Average Net Income per employee Th EUR	Average cost of employee Th EUR	Average Debt Ratio	Average Cost of employees/Oper at. Revenues
West Countries									
AUSTRIA	77	51,711,994	1.80%	15.95	2,478.71	101.22	57.72	0.57	0.65
BELGIUM	48	38,689,917	6.01%	10.33	1,096.08	285.70	62.26	1.51	0.52
CYPRUS	1	323,256	-10.99%	-11.04	135.21	-15.03	0.06	0.71	0.00
DENMARK	21	6,922,098	9.97%	18.41	413.54	63.91	53.80	0.43	0.22
FINLAND	58	66,539,487	3.41%	14.22	538.06	39.27	41.15	0.60	0.25
FRANCE	706	776,692,739	-0.14%	8.73	586.68	129.72	72.02	0.98	0.42
GERMANY	1,125	1,036,181,315	-3.22%	15.49	1,103.82	222.23	59.87	0.61	0.32
GREECE	97	36,555,146	3.07%	8.26	366.83	46.07		0.67	
IRELAND	19	3,566,580	9.13%	2.42	187.35	4.92	71.76	0.82	0.28
ITALY	538	466,696,222	-0.90%	10.86	1,108.49	16.55	47.32	0.73	0.35
LUXEMBOURG	3	1,144,867	13.97%	26.13	14,382.80	6,500.08	66.05	0.35	0.08
NETHERLANDS	88	175,583,408	4.08%	22.00	5,647.59	1,493.61	61.58	0.87	0.23
PORTUGAL	40	1,387,230	0.96%	19.97	299.50	10.64	30.12	0.84	0.28
SPAIN	302	25,650,323	-5.61%	6.49	484.85	16.35	44.58	0.67	0.71
SWEDEN	118	95,930,615	2.84%	12.00	592.90	180.47	43.02	0.58	0.27
UNITED KINGDOM	259	58,422,880	-5.55%	10.35	1,831.25	35.05	59.68	1.05	0.98
Total West	*3,500*	*2,841,998,077*	*-1.38%*	*11.98*	*1,090.80*	*159.50*	*57.54*	*0.76*	*0.43*
Est Countries									
BULGARIA	525	11,454,550	-0.62%	8.85	90.18	2.50	4.03	0.63	0.33
CZECH REPUBLIC	26	6,272,616	-23.71%	15.48	443.31	23.74	18.35	0.53	1.11
ESTONIA	39	3,810,394	7.58%	23.78	134.34	22.62	12.41	0.42	0.25
HUNGARY	10	1,832,768	-0.30%	17.59	1,797.56	2.16	24.54	0.58	0.12
LATVIA	9	1,142,446	11.16%	-0.52	563.63	-89.72	24.22	0.56	0.10
LITHUANIA	14	4,477,329	3.10%		489.23	41.94		0.32	
POLAND	1,109	80,004,161	0.61%	7.18	220.76	35.06	20.64	0.42	0.28
ROMANIA	415	16,410,256	-6.86%	4.30	81.66	1.43	4.68	1.55	0.43
SLOVAKIA	2	685,190	15.53%	22.81	419.94	47.70	12.50	0.31	0.03
Total Est	*2,149*	*126,089,710*	*-1.18%*	*7.68*	*173.83*	*19.92*	*11.63*	*0.73*	*0.34*
Total Average	**5,649**	**2,968,087,787**	**-1.30%**	**10.59**	**741.97**	**104.37**	**41.70**	**0.75**	**0.40**

Note: The data refer to 2005.   Source: *AMADEUS Database* (Bureau van Dijk).

considering the value of the aggregate debt ratio at the country level and not dividing this among the various market sectors.

Analyzing individual countries, one can see that the best Western country in terms of profitability is Luxembourg (followed by the Netherlands), while among Eastern countries the best is Estonia. Comparing the values of the Netherlands and of Estonia (22 v. 24 "EBITDA Margin"), a surprising result comes to light: Estonia seems to have a higher profitability than Netherlands.

However, as already stressed, comparing the data from Eastern and Western Europe requires great caution. In real terms Estonia's higher profitability may result from this country's different phase of economic development compared to the Netherlands and in general, to the different development of Eastern markets compared to Western ones.

Finally, in terms of values for net income per employee, the data regarding Luxembourg significantly exceed that of other countries. The situation of the Netherlands is very similar.

Very similar considerations apply to the Netherlands as well.

The only countries where public enterprises operate with totally negative results and therefore at a loss are Cyprus and Latvia. These countries' results are not very significant because they possess few enterprises (one and nine enterprises respectively).

The values of the ratio between total labour cost and operating revenues, on the other hand, do not present strong anomalies, either within each macro-region or between East and West. The only country in which this value is higher is the Czech Republic. This is an interesting finding because usually Eastern countries have a lower personnel cost. In the case of the Czech Republic a higher amount of earnings was used for the personnel cost. To the extent that this ratio may be considered an indicator of the propensity of these enterprises to over-compensate workers, this may actually be considered an index of inefficiency.

It is interesting to interpret this result in light of some previous studies (Estrin, Hanousek, Kočenda and Svejnar, 2007) indicating that in the Czech Republic labour cost is lower compared to other countries in transition and above all lower compared to Poland. In terms of profitability, on the other hand, our results are substantially in line with those of the authors cited above.

A final consideration concerns profitability (measured by net income per employee). The sample shows that Eastern countries, therefore countries in transition, have a low level of profitability. This data is partially confirmed by the paper cited above, which shows that public ownership negatively influences this index. However, our entire analysis is based on data for the year 2005, which may partially explain the differences in results. The authors citied took into consideration more extended periods of time.

Nor does the analysis of ownership structure present any significant evidence. The values are rather homogeneous among the countries. The States with the most indebted public enterprises are Belgium and the UK[26] and Romania among the Eastern countries.

These same indices were evaluated by distinguishing enterprises' operating sectors, both at the aggregate level and differentiating enterprises with local institutions as shareholders from those having the central State is a shareholder. The sector differentiation allows us to show the phenomenon of data composition from enterprises that carried out activities in extremely varied economic sectors.

---

[26] The development of the British financial market probably explains this observation. More generally, the presence of a high debt ratio cannot necessarily be considered a negative aspect.

From the aggregate analysis (table 16), we can see that the sector with the highest level of profitability is that of finance, followed by communications and utilities and more specifically, electricity. Within the transportation sectors, furthermore, the main data concern airports and highways. The sector analysis shows that these three sectors represent important profit sources (2005).

Oil and mining predominate in net income values. This result is considerably higher than the average of all other sectors. This data is obviously not surprising. For the same sector, table 17 shows the predominant role of the State compared to local enterprises.

Table 16. Selected Performance Indicators for GOEs, by Sector

SECTOR	Number of GOEs	Total Assets th EUR	Average ROA	Average EBITDA Margin (%)	Average Operat. Revenues per employee Th EUR	Average Net Income per employee Th EUR	Average cost of employee Th EUR	Average Debt Ratio	Average Cost of employees/Op erat. Revenues
AGRICULTURE	96	6,450,582	-2.06%	9.75	47.99	1.71	10.90	0.41	0.26
COMMUNICATIONS	90	313,469,661	2.30%	20.14	350.64	25.40	45.58	0.61	0.28
CONSTRUCTIONS	206	13,752,707	-1.93%	9.14	382.83	59.33	33.36	0.78	0.30
FINANCE	676	168,189,112	3.78%	23.84	1,228.84	377.21	60.73	0.64	0.44
MANUFACTURING	898	611,010,962	-2.14%	5.60	191.33	10.38	28.09	0.77	0.36
OIL and MINING	94	362,618,586	3.03%	10.78	4,240.76	1,013.49	35.84	0.63	0.26
POSTAL SERVICES	20	347,725,346	3.91%	8.48	88.03	2.25	31.90	0.76	0.49
TRADE	363	44,294,351	-1.02%	6.45	2,076.56	68.47	31.78	0.64	0.22
TRANSPORTATIONS - of which	*956*	*348,144,343*	*-0.76%*	*7.25*	*313.30*	*19.66*	*39.26*	*0.75*	*0.37*
AIRPORTS	69	29,949,681	4.78%	19.89	177.32	14.74	39.97	0.60	0.48
HIGHWAYS	48	8,346,955	-1.57%	17.19	113.90	14.01	23.20	0.57	0.35
LOCAL TRANSPORTS	338	24,991,303	-3.09%	4.35	159.69	-1.18	37.55	0.64	0.43
RAILWAYS	48	249,287,894	0.61%	6.62	691.50	-4.68	39.75	0.72	0.34
TRANSPORTATION BY AIR	15	14,817,074	-4.59%	11.46	164.01	-7.65	26.38	0.80	0.17
TRANSPORTATION SERVICES	189	4,794,531	-2.78%	3.95	435.89	16.27	41.99	0.80	0.28
TRUCKING AND WAREHOUSING	170	4,515,118	1.87%	6.43	408.13	10.57	44.44	1.06	0.31
WATER TRANSPORTATION	79	11,441,787	3.52%	12.25	511.68	160.31	38.81	0.62	0.37
SERVICES - of which	*1,349*	*112,585,688*	*-7.52%*	*6.40*	*462.81*	*43.35*	*43.84*	*0.80*	*0.61*
BUSINESS SERVICES	362	27,468,544	-6.09%	8.92	1,239.93	177.29	59.00	0.86	0.91
ENGINEERING & MGMT SERVICES	455	62,567,060	-10.16%	6.65	206.35	-8.04	41.21	0.97	0.47
HEALTH SERVICES	154	8,161,579	-8.19%	1.73	56.46	-3.03	23.54	0.54	0.55
OTHER SERVICES	378	14,388,505	-5.48%	5.82	192.83	-6.34	41.21	0.63	0.51
UTILITIES - of which	*765*	*638,101,056*	*2.25%*	*17.60*	*1,264.22*	*145.46*	*55.99*	*0.59*	*0.25*
ELECTRICITY	298	519,934,071	3.10%	19.22	1,359.24	300.02	84.02	0.53	0.27
ENVIRONMENTAL SERVICES	143	10,154,720	0.40%	15.48	549.95	8.94	43.65	0.77	0.28
GAS	109	55,158,194	4.13%	14.93	3,492.11	167.02	45.24	0.61	0.22
MULTIUTILITIES	78	24,007,622	1.72%	17.61	387.41	17.79	33.07	0.50	0.15
WATER SERVICES	137	28,846,449	1.14%	18.81	529.74	12.20	37.96	0.60	0.24
TOTAL	**5,513**	**2,966,342,394**	**-1.58%**	**10.64**	**755.07**	**106.75**	**42.60**	**0.71**	**0.40**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk

Table 17. Selected Performance Indicators for GOEs, by Sector, Central v. Local

| SECTOR | Average EBITDA Margin (%) | | Average Net Income per employee Th EUR | | Average Debt Ratio | | Average Cost of employees/operating revenues | |
| | *of which* | | *of which* | | *of which* | | *of which* | |
	Central	Local	Central	Local	Central	Local	Central	Local
AGRICULTURE	9.91	8.42	1.46	4.46	0.41	0.37	0.24	0.48
COMMUNICATIONS	21.74	12.94	35.07	-27.14	0.60	0.64	0.27	0.33
CONSTRUCTIONS	2.76	18.18	89.01	6.65	0.73	0.85	0.32	0.27
FINANCE	18.82	26.54	743.61	132.94	0.61	0.65	0.71	0.29
MANUFACTURING	5.69	5.05	5.55	50.00	0.76	0.86	0.37	0.27
OIL and MINING	11.89	0.00	1,081.92	21.24	0.64	0.52	0.25	0.44
POSTAL SERVICES	8.48		2.25		0.76		0.49	
TRADE	5.94	8.01	87.41	5.93	0.63	0.65	0.18	0.35
TRANSPORTATIONS - of which	*6.95*	*7.79*	*30.41*	*2.29*	*0.77*	*0.71*	*0.31*	*0.47*
AIRPORTS	18.61	20.38	37.44	7.18	0.69	0.57	0.33	0.54
HIGHWAYS	5.78	32.17	1.91	34.64	0.57	0.57	0.32	0.38
LOCAL TRANSPORTS	7.10	1.73	1.93	-5.60	0.57	0.72	0.36	0.50
RAILWAYS	9.69	2.58	-32.84	41.71	0.76	0.67	0.29	0.42
TRANSPORTATION BY AIR	12.35	1.71	-7.72	-6.86	0.68	2.39	0.18	0.11
TRANSPORTATION SERVICES	4.81	-1.02	25.54	-44.36	0.83	0.64	0.27	0.34
TRUCKING AND WAREHOUSING	5.50	13.12	7.85	30.58	1.02	1.33	0.29	0.43
WATER TRANSPORTATION	10.74	15.87	207.17	9.34	0.65	0.52	0.35	0.43
SERVICES - of which	*7.34*	*5.33*	*-7.10*	*110.58*	*0.79*	*0.80*	*0.56*	*0.66*
BUSINESS SERVICES	9.08	8.79	-50.12	385.21	0.86	0.86	0.90	0.91
ENGINEERING & MGMT SERVICES	7.23	5.33	7.31	-50.29	0.92	1.05	0.48	0.46
HEALTH SERVICES	2.61	0.56	-0.88	-6.49	0.57	0.49	0.44	0.69
OTHER SERVICES	8.57	3.90	5.90	-16.30	0.55	0.68	0.42	0.57
UTILITIES - of which	*19.67*	*17.01*	*390.13*	*43.08*	*0.50*	*0.63*	*0.21*	*0.26*
ELECTRICITY	24.54	16.86	654.40	32.56	0.49	0.55	0.23	0.28
ENVIRONMENTAL SERVICES	6.86	16.47	-0.98	10.45	0.74	0.77	0.17	0.29
GAS	18.00	14.32	180.10	163.87	0.58	0.61	0.07	0.25
MULTIUTILITIES	19.72	16.30	27.29	9.27	0.42	0.56	0.13	0.16
WATER SERVICES	11.76	20.03	1.52	14.14	0.47	0.62	0.34	0.22
TOTAL AVERAGE	**8.72**	**13.16**	**129.28**	**69.65**	**0.71**	**0.71**	**0.39**	**0.41**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

The transportation and services sectors are the ones that show the most consistent losses across countries. Local transportation, railways, transportation services and air transportation are the most negative sectors in terms of profitability. Naturally, for local transportation local enterprises are more common than central ones. The opposite holds for railways; however, it is interesting to stress that railways owned by central Governments show substantially worse profitability indices.

The transportation sector's negative situation is partially justified by a high average labour cost and a general policy of low prices in public transport, which impact negatively on enterprises' earnings. However, it is more difficult to explain the substantial losses in the services sector.

As has been emphasized in other parts of the work, services often fall among those activities defined as (at least in principle) competitive[27]. Such significant losses for these enterprises are due in part to high labour costs, but we are also led to think that public shareholding may have a negative impact on their performance.

Distinguishing between local and central Governments, the higher difference for the service sector is clear. This activity is characterised by a significant positive net income for local GOEs (111 th Euro). On the other hand, central Government owned

---

[27] One must recall that "services" is a catch-all term, to denote a category containing enterprises of very different natures.

Within this macro-sector, as we have already emphasized, various types of services are included, ranging from health, to engineering and management, to a more generic group (defined as "other services") that includes thermal centers, fairgrounds, agencies for territorial development and others. Some of these enterprises actually operate in sectors where the public presence is quite natural, while others work in truly competitive sectors.

enterprises display an extremely negative average net income (-7 th Euro).

The analysis of the financial indices (2005) by sectors has been carried out by dividing Europe into macro-regions, West and East (table 18).

Table 18. Selected Performance Indicators for GOEs, by Sector, West v. East

SECTOR	Average EBITDA Margin (%) *of which*		Average Net Income per employee Th EUR *of which*		Average Debt Ratio *of which*		Average Cost of employees/operating revenues *of which*		Average Cost of employees *of which*	
	West	East	West	East	West	East	West	East	West	East
AGRICULTURE	7.64	10.21	5.85	0.93	0.62	0.35	0.42	0.24	38.95	6.16
COMMUNICATIONS	17.94	23.59	28.48	21.54	0.79	0.34	0.28	0.29	67.48	11.99
CONSTRUCTIONS	14.75	0.55	100.82	10.99	0.77	0.78	0.27	0.34	53.34	6.13
FINANCE	25.01	15.89	406.48	214.38	0.66	0.47	0.42	0.59	68.38	13.15
MANUFACTURING	6.12	5.31	33.39	1.72	0.89	0.72	0.48	0.30	51.50	16.78
OIL and MINING	17.54	3.58	2,752.37	11.42	0.57	0.67	0.19	0.32	71.51	7.11
POSTAL SERVICES	8.13	10.13	2.89	0.51	0.85	0.41	0.47	0.57	36.70	6.28
TRADE	5.36	7.64	132.16	9.75	0.74	0.54	0.24	0.21	55.60	8.85
TRANSPORTATIONS – of which	*7.01*	*8.07*	*9.15*	*44.92*	*0.79*	*0.62*	*0.36*	*0.37*	*48.62*	*9.72*
AIRPORTS	20.23	18.39	17.10	0.33	0.65	0.38	0.52	0.31	46.24	10.73
HIGHWAYS	30.35	3.31	37.36	0.32	0.57	0.57	0.25	0.43	45.25	4.15
LOCAL TRANSPORTS	3.57	6.57	-2.64	1.45	0.72	0.43	0.46	0.37	49.00	5.96
RAILWAYS	5.12	13.36	-7.46	5.03	0.74	0.67	0.35	0.30	40.41	36.95
TRANSPORTATION BY AIR	16.45	4.48	-0.97	-14.34	0.88	0.71	0.16	0.19	35.98	15.19
TRANSPORTATION SERVICES	4.04	3.29	18.60	1.72	0.80	0.83	0.28	0.31	46.58	9.62
TRUCKING AND WAREHOUSING	6.15	7.54	13.79	1.59	1.03	1.15	0.26	0.46	56.28	6.67
WATER TRANSPORTATION	10.34	16.83	10.47	377.83	0.77	0.39	0.39	0.34	46.84	21.94
SERVICES – of which	*6.16*	*7.04*	*61.33*	*4.15*	*0.85*	*0.62*	*0.68*	*0.43*	*56.06*	*12.87*
BUSINESS SERVICES	8.58	11.38	203.59	23.78	0.85	0.95	0.98	0.39	59.75	53.91
ENGINEERING & MGMT SERVICES	5.12	9.36	-15.24	2.61	1.11	0.67	0.50	0.43	60.77	8.16
HEALTH SERVICES	1.85	1.63	-6.68	-0.56	0.49	0.57	0.67	0.45	46.36	5.17
OTHER SERVICES	5.74	6.10	-8.70	0.76	0.69	0.38	0.53	0.43	50.50	7.94
UTILITIES – of which	*18.15*	*13.79*	*180.79*	*10.75*	*0.64*	*0.39*	*0.24*	*0.30*	*63.57*	*9.13*
ELECTRICITY	19.61	16.32	399.66	13.54	0.58	0.34	0.29	0.09	94.97	10.89
ENVIRONMENTAL SERVICES	15.64	13.48	10.00	-0.28	0.78	0.55	0.29	0.17	46.77	7.93
GAS	15.07	11.50	175.86	45.88	0.62	0.46	0.11	2.05	47.30	12.32
MULTIUTILITIES	20.31	12.34	24.95	9.36	0.62	0.33	0.15	0.15	46.27	9.54
WATER SERVICES	20.04	12.46	14.80	0.09	0.61	0.53	0.22	0.32	44.56	6.10
TOTAL AVERAGE	**11.95**	**7.72**	**160.01**	**20.73**	**0.76**	**0.61**	**0.43**	**0.34**	**57.54**	**12.22**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

The data show that Western countries are superior in terms of profitability within the utilities (specifically, electricity and gas), for construction and oil. In transportations taken as a whole the contrary is true (even if Western countries are more profitable for highways and air transportation).

Another element that should be emphasized is the greater propensity of Western countries to use substantial levels of indebtedness for all sectors. This too can be justified in terms of the different levels of financial market development in the two European areas.

Finally, in Western countries compared to Eastern countries, the employee cost is higher for all sectors.

A final analysis of the financial data has been carried out, distinguishing the various levels of Government in the two European macro-areas (table 19). From the data, a higher level of profitability for local Governments compared to the State is shown, both for East and West, with the single exception of Eastern European municipalities, which have a lower EBITDA level compared to all other levels of Government. The opposite is true for net income level, which is higher for the central Government compared to the local ones. For all levels of government the Western countries show a higher net income level than the Eastern countries.

Table 19. Selected Performance Indicators for GOEs, by Gvt.Level, West v. East

LEVEL OF GOVERNMENT	Number of GOEs		Average EBITDA Margin (%)		Average Net Income per employee Th EUR		Average Debt Ratio		Costs of employees/operating revenues	
	of which		*of which*		*of which*		*of which*		*of which*	
	West	**East**	**West**	**East**	**West**	**East**	**West**	**East**	**West**	**East**
STATE	1,459	1,972	9.80	7.65	274.13	21.41	0.88	0.63	0.47	0.32
REGION	327	5	10.86	17.58	252.49	14.03	0.65	0.40	0.46	0.19
PROVINCE	96	3	13.75	13.47	15.06	2.29	0.71	0.43	0.59	0.28
MUNICIPALITY	1,599	168	13.87	7.49	44.40	2.01	0.68	1.86	0.33	0.48
MIXED LOCAL	19	1	19.59		15.06	-4.35	0.73	1.00	4.70	11.86
TOTAL	**3,500**	**2,149**	**11.98**	**7.68**	**159.49**	**19.92**	**0.76**	**0.73**	**0.43**	**0.34**

Note: The data refer to 2005.

5.3 *Testing the different performances of public enterprises*

In order to carry out a more exhaustive analysis, rigorously evaluating how public shareholding in enterprises influences the European economy, it is necessary to test the significance of the results obtained using the differences between mean and median for the main financial indices.

For this reason many tests were carried out using *t-Student* statistics for the means and *z-Wilcoxon* statistics for the medians.

With this data any existing differences between indices of performance can be evaluated, distinguishing between the two European macro-regions and between sector of activity, rather than type of public shareholder.

Given that comparing performance indicators is a sensible exercise within a (relatively) homogenous sector of activity, for countries in our sample with a non-negligible number of enterprises we had to carry out a further selection within our sample. In particular, countries with a higher percentage of public shareholding, where the public presence in the sectors under consideration was most significant, were analysed. For Western Europe, Austria, Finland, France, Germany, Italy, Sweden and the UK were considered, while for Eastern Europe, Bulgaria, Poland and Romania were considered.

The first comparison carried out was at the country level, within 4 of the 11 macro-sectors of the economic activities shown.

These 4 macro-sectors were chosen both on the basis of number of enterprises present, and based on their size (in terms of total assets).

The sectors analysed were: manufacturing and communications (tlc) among those most open to competition, and utilities and transportation among those where the public presence is most justifiable according to standard canons.

The indices of debt ratio, net income, labour cost, EBITDA, and labour cost on operating revenues were evaluated.

All tests were carried out within the two European territorial macro-sectors, West and East. This criterion seemed to be the most correct, taking into consideration all the differences that exist between the two areas, described in the preceding sections.

The interpretation of the tests considered the following premise. For greater clarity, Western countries were evaluated if on average they presented significant differences compared with other Western countries; the same was done for the statistics of the Eastern European countries.

As a first important result the tests showed that financial indicators for the utilities and transportation sectors were more diversified across countries than the tlc and manufacturing sectors were. In other words, while for the communications and manufacturing sectors all countries seem to be roughly alike in terms of choice and performance indicators considered, the opposite holds for utilities and transportation. This evidence seem to indicate that in competitive sectors the public presence cannot bring about very differentiated choices. On average there are no significant differences in performance between the

countries in these two macro-sectors. Market discipline seems to prevail over possible political choices.

A different story can be told regarding enterprises in sectors which are structurally sheltered from competition. For utilities and transportation the most significant indices are the debt ratio, labour cost and EBITDA.

The average debt ratio value for the Austrian transportation sector, for example, is 0.574 (less than the average of the Western countries), while that of France is 0.964 – that is, higher than the average[28]. The same value in Poland is 0.391 (less than the Eastern average), while that of Romania is 1.316, higher than the average. It should be kept in mind, however, that these data are evaluated considering the initial premise of the work – that is, the distinction between the two European macro-areas. This is fundamental because otherwise it might seem that Romania, compared to France, has a higher capacity for transportation sector indebtedness, which is quite difficult to believe.

In analyzing the utilities data, the index that deserves greater attention is the EBITDA. In Austria the median value is 21.83%, while in Germany it is 16.94% – both higher than the Western countries average - while in Italy this value is 11.99% (lower than the average). The same data that turns out to be significantly lower than average in the East is that of Romania, 4.61%.

Some values regarding net income should be pointed out in comparing the two levels of Government within the sectors. The mean value of net income per employee in the manufacturing sector for local GOEs is about 50 Th. Euro, higher than the average, while the value for central GOEs is 5.5 Th. Euro. The same data for the utilities sector are 43 Th. Euro for local GOEs and 390 Th. Euro for central GOEs (Stata Panel in Appendix).

---

[28] Panel Tables can be found in the Appendix. The data refer to 2005.

This first statistical analysis gives us a general view within the sectors of differences of profitability, rather than efficiency, among the European countries tested.

However, to better understand the public shareholding role in the market sectors, significance within each country should be examined.

Considering Italy, it can be noted that the utilities sector indices were not at all positive compared to the European average. The data suggest that this is a sector with higher levels of indebtedness compared to the average, but with significantly lower values of profitability and efficiency and at the same time with a higher labour costs to revenues ratio compared to the average. The labour/revenue relationship data show, furthermore, that on average salaries paid to workers erode the enterprise's earnings to a greater amount.[29] The transportation sector is a very similar case. Here we find a labour cost superior to the European median, with at the same time a lower level of profitability.

Austria, on the other hand, is the country with highest profitability on average compared to all the other Western countries for 3 sectors out of 4, the only exception being manufacturing.

---

[29] It should be emphasized, however, as has already been stated, the utilities sector is made up of various sub-sectors: electricity, environmental, gas, water and multi-utilities. In Italy it is well known that gas and electricity are sources of high earnings, unlike the water and environmental sectors, which usually generate huge losses. The negative profitability of Italian utilities compared to the rest of the European countries can thus be due to losses caused by these two micro-sectors, which in other countries do not necessarily show negative values.

Finally, Germany merits attention because the labour cost values in almost all sectors are significantly higher than those of competing countries. In the East the same can be said for Poland, which shows significantly higher labour costs and a significantly lower debt level. In Romania, indeed, debt ratio level is significantly higher than in the other Eastern countries.

Among Western countries, the U.K. is the most indebted in the various sectors. The above-mentioned aggregate finding is confirmed sector by sector, and thus does not depend on a "composition effect." On the other hand, Sweden stands out as the "most efficient" country, with a lower relationship between costs and revenues.

Following this internal evaluation of the countries, it is now fundamental to compare the European macro-areas.

As is predictable, the Western countries have a higher average indebtedness compared to the Eastern countries, with a higher labour cost and higher level of profitability in all the sectors analysed. This attests to the fact that strong differences in the two areas still exist at European level, in terms of finance, earnings and employees. It should again be noted that this finding comes from a sector-by-sector analysis. In this way the effects of the sample composition should have been sterilized.

A further aspect to consider is the role of the level of Government. In each of the sectors considered we have attempted to evaluate whether the behaviour of enterprises with local public shareholding is significantly different from that of enterprises with central State shareholding.

The data show that in different sectors (for example manufacturing, transportation and utilities) the enterprises with local shareholding have a higher labour cost compared to those with State shareholding (Stata Panel in Appendix). This

phenomenon can be interpreted by analysing employee characteristics at the local and central levels. For local Governments, employees and their families all vote in the constituency which supports that local Government. In line with this, an enterprise with local public shareholding will be more likely to hire an excessive number of employees (and/or to pay a higher wage) compared to a central one, since a local politician's proximity to the electorate is greater and hiring will be a political means used to put pressure on the electorate.

Regarding profitability indices, the data show discontinuity, with net income higher for local enterprises in the utilities and manufacturing sectors and lower in the other two sectors.

5.4 Testing the difference performance between total public v. not total public enterprises

In the preceding sections we emphasised that the AMADEUS database is very approximate in furnishing data regarding enterprise ownership. Despite many missing data, it has nonetheless been possible to subdivide some of the enterprises in the sample into two groups: those with total public shareholding versus those with mixed shareholding.

Local and central shareholding is further distinguished; the number of the enterprises on which this evaluation can be carried out are 1,635 local and 1,850 central, respectively.

Tables 20, 21 and 22 subdivide the number of enterprises within individual sectors according to whether they have total or partial shareholding by central or local Governments (2005). In absolute terms, the number of enterprises with partial shareholding is higher than the number of enterprises with total shareholding (1,771 v. 1,714). Total public assets are 15%, while mixed assets have a value of 62%.[30]

---

[30] The sum of these two percentages is not 100 because the sample is missing some data regarding the percentage of ownership. Therefore, these enterprises are not considered in the analysis.

Table 20. GOEs, Tot Public_Not Tot Public

SECTOR	Number of GOEs	of which		Total Assets Th EUR	Total Assets, of which		% Total Assets, of which	
		Total Public	Not Total Public		Total Public	Not Total Public	Total Public	Not Total Public
AGRICULTURE	96	78	10	6,450,582	6,034,820	16,316	93.55%	0.25%
COMMUNICATIONS	90	33	20	313,469,661	3,649,323	298,168,298	1.16%	95.12%
CONSTRUCTIONS	206	60	69	13,752,707	2,750,807	7,041,922	20.00%	51.20%
FINANCE	676	211	225	168,189,112	57,203,366	78,182,640	34.01%	46.48%
MANUFACTURING	898	238	351	611,010,962	6,515,921	567,522,574	1.07%	92.88%
OIL and MINING	94	37	29	362,618,586	10,077,675	322,120,219	2.78%	88.83%
POSTAL SERVICES	20	5	3	347,725,346	11,001,036	4,455,154	3.16%	1.28%
TRADE	363	68	119	44,294,351	10,442,354	10,206,239	23.57%	23.04%
TRANSPORTATIONS - of which	*956*	*243*	*249*	*348,144,343*	*160,612,720*	*70,832,947*	*46.13%*	*20.35%*
AIRPORTS	69	12	34	29,949,681	9,041,092	19,634,167	30.19%	65.56%
HIGHWAYS	48	17	23	8,346,955	437,783	5,981,926	5.24%	71.67%
LOCAL TRANSPORTS	338	140	91	24,991,303	8,414,344	11,685,753	33.67%	46.76%
RAILWAYS	48	18	16	249,287,894	134,428,362	16,755,571	53.92%	6.72%
TRANSPORTATION BY AIR	15	1	9	14,817,074	25,331	11,159,680	0.17%	75.32%
TRANSPORTATION SERVICES	189	19	21	4,794,531	1,020,975	410,490	21.29%	8.56%
TRUCKING AND WAREHOUSING	170	10	35	4,515,118	32,713	1,414,783	0.72%	31.33%
WATER TRANSPORTATION	79	26	20	11,441,787	7,212,120	3,790,577	63.03%	33.13%
SERVICES - of which	*1,349*	*506*	*367*	*112,585,688*	*59,100,158*	*26,041,932*	*52.49%*	*23.13%*
BUSINESS SERVICES	362	84	96	27,468,544	13,754,408	8,427,486	50.07%	30.68%
ENGINEERING & MGMT SERVICES	455	159	131	62,567,060	29,830,519	14,106,742	47.68%	22.55%
HEALTH SERVICES	154	116	26	8,161,579	7,244,988	634,175	88.77%	7.77%
OTHER SERVICES	378	148	114	14,388,505	8,270,243	2,873,529	57.48%	19.97%
UTILITIES - of which	*765*	*235*	*329*	*638,101,056*	*119,431,499*	*444,550,060*	*18.72%*	*69.67%*
ELECTRICITY	298	114	103	519,934,071	90,521,744	370,164,023	17.41%	71.19%
ENVIRONMENTAL SERVICES	143	31	66	10,154,720	2,508,292	3,111,993	24.70%	30.65%
GAS	109	19	59	55,158,194	1,618,623	48,597,925	2.93%	88.11%
MULTIUTILITIES	78	28	25	24,007,622	18,262,113	2,820,520	76.07%	11.75%
WATER SERVICES	137	43	76	28,846,449	6,520,727	19,855,599	22.60%	68.83%
TOTAL	**5,513**	**1,714**	**1,771**	**2,966,342,394**	**446,819,679**	**1,829,138,301**	**15.06%**	**61.66%**

Note 1: The sum of enterprises totally public and those partially public is not equal to the number of GOEs and their summation is not 100% because in the sample some ownership related data are missing.
Note 2: The data refer to 2005.
Source: AMADEUS Database (Bureau van Dijk).

Table 21. Central GOEs, Tot Public_Not Tot Public

SECTOR	Number of GOEs	Number of Central GOEs	of which		Central Govt.Total Assets	of which	
			Total Public	Not Total Public		Total Public	Not Total Public
AGRICULTURE	96	87	75	6	6,401,662	5,996,386	8,751
COMMUNICATIONS	90	76	30	14	307,581,584	3,643,052	292,942,425
CONSTRUCTIONS	206	128	34	36	4,513,968	403,882	824,329
FINANCE	676	268	76	47	95,057,969	32,156,814	39,015,420
MANUFACTURING	898	801	230	312	464,265,648	6,095,437	430,925,405
OIL and MINING	94	88	35	26	234,833,703	9,938,930	195,546,638
POSTAL SERVICES	20	20	5	3	347,725,346	11,001,036	4,455,154
TRADE	363	277	58	89	41,459,760	9,990,714	8,706,877
TRANSPORTATIONS - of which	*956*	*649*	*174*	*74*	*296,969,058*	*149,931,714*	*37,649,626*
AIRPORTS	69	19	9	2	12,216,099	5,922,463	6,091,876
HIGHWAYS	48	31	15	11	514,538	434,377	64,935
LOCAL TRANSPORTS	338	185	89	13	7,386,794	2,477,579	3,701,137
RAILWAYS	48	29	16	2	247,713,221	134,310,689	15,574,335
TRANSPORTATION BY AIR	15	14	1	9	14,809,818	25,331	11,159,680
TRANSPORTATION SERVICES	189	163	16	6	4,240,783	936,335	54,919
TRUCKING AND WAREHOUSING	170	149	9	21	2,984,645	18,284	76,076
WATER TRANSPORTATION	79	59	19	10	7,103,160	5,806,656	926,668
SERVICES - of which	*1,349*	*737*	*299*	*102*	*77,525,357*	*40,477,483*	*12,107,103*
BUSINESS SERVICES	362	172	31	10	10,306,433	5,880,804	33,160
ENGINEERING & MGMT SERVICES	455	314	125	63	58,110,198	28,654,511	11,269,048
HEALTH SERVICES	154	93	79	6	651,193	435,258	20,048
OTHER SERVICES	378	158	64	23	8,457,533	5,506,910	784,847
UTILITIES - of which	*765*	*216*	*80*	*45*	*451,473,426*	*65,019,222*	*324,973,089*
ELECTRICITY	298	123	51	23	402,658,864	63,030,567	282,131,246
ENVIRONMENTAL SERVICES	143	18	7	4	751,974	665,112	16,430
GAS	109	20	1	4	45,490,019	4,922	41,940,345
MULTIUTILITIES	78	35	11	7	1,494,579	410,979	716,766
WATER SERVICES	137	20	10	7	1,077,990	907,642	168,302
TOTAL	**5,513**	**3,347**	**1,096**	**754**	**2,327,807,481**	**334,654,670**	**1,347,154,817**

Note: The data refer to 2005.

Source: AMADEUS Database (Bureau van Dijk).

Table 22. Local GOEs, Tot Public_Not Tot Public

SECTOR	Number of GOEs	Number of Local GOEs	of which Total Public	of which Not Total Public	Local Govt. Total Assets	of which Total Public	of which Not Total Public
AGRICULTURE	96	9	3	4	48,920	38,434	7,565
COMMUNICATIONS	90	14	3	6	5,888,077	6,271	5,225,873
CONSTRUCTIONS	206	78	26	33	9,238,739	2,346,925	6,217,593
FINANCE	676	408	135	178	73,131,143	25,046,552	39,167,220
MANUFACTURING	898	97	8	39	146,745,314	420,484	136,597,169
OIL and MINING	94	6	2	3	127,784,883	138,745	126,573,581
POSTAL SERVICES	20						
TRADE	363	86	10	30	2,834,591	451,640	1,499,362
TRANSPORTATIONS - of which	*956*	*307*	*69*	*175*	*51,175,285*	*10,681,006*	*33,183,321*
AIRPORTS	69	50	3	32	17,733,582	3,118,629	13,542,291
HIGHWAYS	48	17	2	12	7,832,417	3,406	5,916,991
LOCAL TRANSPORTS	338	153	51	78	17,604,509	5,936,765	7,984,616
RAILWAYS	48	19	2	14	1,574,673	117,673	1,181,236
TRANSPORTATION BY AIR	15	1			7,256		
TRANSPORTATION SERVICES	189	26	3	15	553,748	84,640	355,571
TRUCKING AND WAREHOUSING	170	21	1	14	1,530,473	14,429	1,338,707
WATER TRANSPORTATION	79	20	7	10	4,338,627	1,405,464	2,863,909
SERVICES - of which	*1,349*	*612*	*207*	*265*	*35,060,331*	*18,622,675*	*13,934,829*
BUSINESS SERVICES	362	190	53	86	17,162,111	7,873,604	8,394,326
ENGINEERING & MGMT SERVICES	455	141	34	68	4,456,862	1,176,008	2,837,694
HEALTH SERVICES	154	61	37	20	7,510,386	6,809,730	614,127
OTHER SERVICES	378	220	84	91	5,930,972	2,763,333	2,088,682
UTILITIES - of which	*765*	*549*	*155*	*284*	*186,627,630*	*54,412,277*	*119,576,971*
ELECTRICITY	298	175	63	80	117,275,207	27,491,177	88,032,777
ENVIRONMENTAL SERVICES	143	125	24	62	9,402,746	1,843,180	3,095,563
GAS	109	89	18	55	9,668,175	1,613,701	6,657,580
MULTIUTILITIES	78	43	17	18	22,513,043	17,851,134	2,103,754
WATER SERVICES	137	117	33	69	27,768,459	5,613,085	19,687,297
TOTAL	**5,513**	**2,166**	**618**	**1,017**	**638,534,913**	**112,165,009**	**481,983,484**

Note: The data refer to 2005. Source: AMADEUS Database (Bureau van Dijk).

136

Examining the control structure of the enterprises, we see that at the local level the presence of mixed enterprises (1,017) is higher, while at the central level the presence is lower (1,096 totally public).

For the single sectors, the most consistent number of totally public central enterprises is services taken as an aggregate, followed by manufacturing. For the local ones the primary sector is again that of services, followed by utilities. This last analysis shows that the on the European level services sector not only has shareholding by local entities but in most cases the Governments are the only and total shareholders.

On the basis of this data, then, it is possible to test whether and how the presence of private shareholders - that is, total public shareholding – can be associated with different financial indices.

In a preliminary aggregate analysis, considering all enterprises with public shareholding (not distinguishing between central and local) one can see that the enterprises with entirely public capital have less capacity for indebtedness on average, compared to mixed enterprises. They have a lower profitability and efficiency and a higher labour cost on operating revenues. From these results, then, it would seem correct to affirm that totally public shareholding impacts negatively on the economy. The enterprises are less capable of attracting external financiers, show higher costs and at the same time lower profitability. Another point to emphasize are the signs of the profitability indices: whatever index we evaluate, the sign is the same.

If the same evaluation is made distinguishing the enterprises with local shareholding from those with central State shareholding, at the local level all the statements we have just made are confirmed. For the enterprises with State shareholding the same significance for indebtedness and labour cost indicators

is found, but for profitability and management efficiency there are no significant differences.

These tests show that the presence of private subjects within the body of stockholders has a greater impact on the enterprises at local level, compared to those at the central level.

Distinguishing between the four sectors - manufacturing, transportation, utilities, tlc - we can see that the aggregate values for enterprises at the local level are led by the transportation and utilities sectors - that is, by those sectors in which public shareholding is most important. For both these sectors and for the aggregate local value, the signs of the indices' averages are the same. For the manufacturing and tlc sectors, on the other hand, significances do exist, but not enough to explain the data at an aggregate level. The signs of differences between averages and medians are not systematic.

5.5 *The performance of GOEs: regression analysis*

To conclude our performance analysis of enterprises with public shareholding in the European scenario, some regressions were carried out, allowing us to estimate the extent to which the efficiency and profitability indicators used in the preceding sections were correlated with characteristics typical of the enterprises in the sample.

The regression model adopted is that of OLS, Ordinary Least Squares. This multivariate linear regression model allows us to

make statistical inferences, to estimate how certain variables influence a specific element, keeping some regressors constant.

$$\gamma = \beta_0 + \beta_1 \chi_1 + \beta_2 \chi_2 + \ldots\ldots \beta_\kappa \chi_\kappa + u^{31} \text{ where } k = 1,\ldots,n.$$

The specific indices under analysis are: debt ratio, EBITDA, labour cost on operating revenues, labour intensity (obtained by the ratio between employees and total assets) and value added of GOEs per employee.

The control variables used are:

- Country's GDP, expression of the country's richness;
- Total Assets or Operating Revenues, variables from the enterprises under consideration[32];
- Utilities, Transportation, TLC, Manufacturing, variables that can express the context in which individual enterprises operate.

These are taken as the control variables. Other variables have been introduced in the analysis. The focus of our estimates is represented by variables as an expression of the enterprises'

---

[31] β_0 is the intercept of regression line; β_1 to β_κ are called slope parameters; u is the error term (or disturbance).

[32] The choice between one variable and another is influenced by the performance index that we want to explain. In the cases of EBITDA, value added per employee and labour cost on operating revenues, total assets have been used; while operating revenues have been used to estimate labour intensity and debt ratio. This decision is based on the characteristics of the indices used. It would not be correct to estimate debt ratio and labour intensity using total assets because these same indices depend on such values (debt ratio = total liabilities/total assets; labour intensity = employees/total assets).

ownership structure (Total Public) and the type of public institution participating in these enterprises (Local).

Tables 23 and 24 summarize the results obtained.

Table 23: Debt Ratio and Labour Intensity Regression Analysis.

COEFFICIENT	DEBT RATIO	LABOUR INTENSITY
Constant	0.241	3.931 ***
	(0.555)	(0.503)
GDP	0.0595 *	-0.370 ***
	(0.0317)	(0.0286)
Operating Revenues	-0.0890 ***	-0.169 ***
	(0.0138)	(0.0124)
Utilities	0.0610	-0.0732
	(0.0946)	(0.0858)
Transports	0.0584	0.858 ***
	(0.0960)	(0.0851)
Manufacturing	0.170 *	0.737 ***
	(0.0980)	(0.0847)
Tlc	0.0974	0.359
	(0.269)	(0.233)
Total Public	-0.0248	0.404 ***
	(0.0667)	(0.0596)
Local	-0.00442	-0.742 ***
	(0.100)	(0.0887)
Observations	3,244	3,485
R-squared	0.015	0.369

Note: The data refer to 2005.
The dependent variable in the first regression is Debt Ratio, in the second regression is Labour Intensity. GDP is Country's Gross Domestic Product. Operating Revenues controls for the size of GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government.
Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Table 24: Ebitda, Labour Cost/Operating Revenues and Value Added/Employees Regression Analysis.

COEFFICIENT	EBITDA	LABOUR COST/OPERATING REVENUES	VALUE ADDED/EMPLOYEES
Constant	13.99 **	0.957 *	-6.323 ***
	(7.079)	(0.540)	(0.419)
GDP	-1,193 ***	-0.0215	0.362 ***
	(0.402)	(0.0308)	(0.0228)
Total Assets	2.250 ***	-0.0197	0.249 ***
	(0.177)	(0.0134)	(0.00973)
Utilities	1.092	-0.251 ***	-0.110 *
	(1.154)	(0.0907)	(0.0564)
Transports	-5.965 ***	-0.0222	-0.399 ***
	(1.185)	(0.0914)	(0.0594)
Manufacturing	-4.623 ***	-0.117	-0.375 ***
	(1.293)	(0.0979)	(0.0704)
Tlc	4.374	-0.0606	0.329 *
	(3.252)	(0.256)	(0.181)
Total Public	-2.085 **	0.0225	-0.184 ***
	(0.836)	(0.0644)	(0.0434)
Local	3.401 ***	0.185 *	0.642 ***
	(1.250)	(0.0972)	(0.0686)
Observations	2,836	2,953	2,145
R-squared	0.088	0.006	0.617

Note: The data refer to 2005.

The dependent variable in the first regression is EBITDA, in the second regression is Labour Cost/Operating Revenues, in the third regression is Value Added/Employees. GDP is Country's Gross Domestic Product. Total Assets controls for the size of the GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government.

Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Despite indications that emerged in the preceding sections following tests on averages and medians demonstrating that differences in this index depend in a significant way on some of the enterprises' characteristics, it is clear from the regression estimates that the only truly relevant element for the debt ratio is enterprise size, measured by operating revenues. The data reveal that indebtedness level is inversely correlated to enterprise size: the smaller the enterprise, the higher the level of indebtedness. This is found with notable significance (1%).

This result, though in qualitative terms essentially robust,[33] can also have another interpretation. The correlation between debt ratio and operating revenues may be due to the fact that when enterprises manage to achieve high earnings they are less likely to turn to forms of indebtedness. Interpreting operating revenues as a possible form of cash flow, economic theory tells us that enterprises will tend to use cash flow first; only after this will they resort to financial markets[34].

The other two variables that to some degree influence the debt ratio are represented by the country's level of wealth and the fact that the enterprise under consideration belongs to the manufacturing sector. Both of these elements positively influence the debt ratio. The richer a country is, the higher the level of indebtedness by enterprises with public shareholding. At the same time, those enterprises operating in the manufacturing sector show a higher debt ratio level compared to those operating in other sectors.

---

[33] In other regressions (not shown here) we have checked that the same result emerges if size is captured through the number of employees.

[34] The classic reference on the "pecking order" theory is Myers (1984).

The debt ratio does not seem to be correlated to any of the other variables used. The GOE level of indebtedness seems to depend neither on the ownership structure nor on the type of public shareholder participating within the enterprise.

Another index that we have considered is labour cost on operating revenues. Assuming that input and output prices in each sector are identical for all enterprises, the value of this ratio may be interpreted as an index of productivity. This assumption, however, is not always true so probably a safer interpretation would refer to a kind of "benevolence" that enterprises have towards their employees, expressed as accumulating earnings used for paying salary costs[35].

Even the values of this index seem to be significantly influenced by several factors. There is a negative correlation between all the control variables, with the exceptions of ownership structure and level of Government. The presence of local public shareholders results in higher labour cost compared to central Government shareholding. Operating within the utilities sector has a negative influence on the relationship between labour cost and operating revenues; this data is significant to 1%. However, the *R-squared* is very low (0.6%), which shows that the control variables used in our regression only minimally explain this index's curve.

The other three regressions are of greater interest. EBITDA, labour intensity and value added per employee depend much more on the control variables used, above all on the presence of total public property or the fact that the public shareholder is "local."

---

[35] In particular, the level of operating revenues, especially for regulated enterprises (even within the same sector), can be due simply to a political decision by political authorities to provide the service at a low price. Therefore, great caution in interpreting these data is necessary.

While for EBITDA we see an inverse relationship between the earnings of the country where an enterprise operates and the enterprise's size, these two variables have the same signs for the other two indices. Labour intensity is inversely correlated with GDP and size, while value added per employee shows a positive correlation.

For these three indices, even the enterprises' sectors of activity have an important role. The manufacturing and transportation sectors are significant in all three regressions and the signs of correlation agree within the indices considered. Labour intensity is positively influenced by these two sectors, while EBITDA and value added are negatively influenced. This means that within transportation and manufacturing we see higher labour intensity yet lower profitability levels. On the other hand, operating within utilities and communications sectors is significant only in terms of value added per employee.

It is much more interesting to consider how these indices relate to ownership structure and type of public shareholder in enterprises. An ownership structure that is entirely publicly controlled has (as we noted in the preceding analysis) negative effects on profitability and value added produced by the enterprises and results in higher labour intensity. This means that enterprises with entirely public capital not only operate with lower profitability levels compared to enterprises with mixed shareholding, but they make a smaller contribution to value added production and tend to assume more employees.

Analyzing the type of public shareholder, we find equally interesting results. Local shareholding is associated with higher profitability levels, higher value added per employee and lower assumption level (with reference to enterprise capitalisation) compared to enterprises with central Government shareholding. Therefore, we can say that while the results regarding ownership

structure were somewhat predictable in light of the studies already present in the literature and the analysis carried out in the preceding sections of this work, the data regarding "type" of public shareholder are less obvious. The analysis clearly shows that municipal capitalism is in some way preferable to central capitalism. It can guarantee positive results in terms of profitability, efficiency and labour hoarding. Taking sector and enterprise size as control variables, the effect of sample composition (local versus State public enterprises) should have filtered this result.

A final consideration regarding these three indices concerns the R-squared value. While for EBITDA the variables considered influence 9% of its overall value, for labour intensity and value added per employee the values reached 37% and 62% respectively. This means that the values of the two indices are in large part (for value added more than half) explained by the sector variables used in these estimates, as well as the variables regarding ownership structure and type of public shareholder.

5.6 Institutional aspects: regression analysis

Following this first general regression analysis, we went on to evaluate whether the institutional structure of the countries under consideration could influence the performance level of enterprises with public shareholding.

To do this we included four other variables in our regression estimates. Initially we introduced the "federal" variable, in order to take into consideration federally-structured countries within the EU 27 (Austria, Belgium and Germany). We evaluated how belonging to this institutional form reacts on the performance indicators analysed.

Then we "de-composed" the federal and local variables into three sub-variables: Federal-Central, Federal-Local and Non-Federal–Local. These three variables allow us to consider the countries' institutional structure and type of public institution shareholding in the enterprises at the same time. Having created these variables, we then evaluated whether the enterprises' performance was associated with the shareholding public institution, or whether shareholding by central public institutions (that is, local ones) and the countries' federal structure were in some way correlated.

Tables 25, 26, 27 and 28 show the results obtained (2005).

Table 25: Debt Ratio and Labour Intensity Regression Analysis with federal dummy.

COEFFICIENT	DEBT RATIO	LABOUR INTENSITY
Constant	-0.309	3.229 ***
	(0.591)	(0.535)
GDP	0.0905 ***	-0.331 ***
	(0.0337)	(0.0303)
Operating Revenues	-0.0912 ***	-0.172 ***
	(0.0138)	(0.0124)
Utilities	0.0571	-0.0779
	(0.0945)	(0.0856)
Transports	0.0366	0.831 ***
	(0.0962)	(0.0852)
Manufacturing	0.169 *	0.734 ***
	(0.0979)	(0.0846)
Tlc	0.0682	0.325
	(0.269)	(0.232)
Total Public	-0.0186	0.409 ***
	(0.0667)	(0.0595)
Local	0.0506	-0.665 ***
	(0.102)	(0.0909)
Federal	-0.246 ***	-0.320 ***
	(0.0919)	(0.0840)
Observations	3,244	3,485
R-squared	0.017	0.372

Note: The data refer to 2005.

The dependent variable in the first regression is Debt Ratio, in the second regression is Labour Intensity. GDP is Country's Gross Domestic Product. Operating Revenues controls for the size of GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government. Federal is an institutional dummy that takes value of 1 if the country considered has a federal structure and it takes value of 0 if the country considered has a not federal structure.

Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Table 26: Ebitda, Labour Cost/Operating Revenues and Value Added/Employees Regression Analysis with federal dummy.

COEFFICIENT	EBITDA	LABOUR COST/OPERATING REVENUES	VALUE ADDED/EMPLOYEES
Constant	26.51 ***	0.658	-5.809 ***
	(7.521)	(0.576)	(0.437)
GDP	-1.882 ***	-0.00488	0.334 ***
	(0.425)	(0.0327)	(0.0238)
Total Assets	2.267 ***	-0.0202	0.249 ***
	(0.176)	(0.0134)	(0.00970)
Utilities	1.228	-0.254 ***	-0.0983 *
	(1.150)	(0.0907)	(0.0563)
Transports	-5.428 ***	-0.0354	-0.375 ***
	(1.185)	(0.0918)	(0.0595)
Manufacturing	-4.680 ***	-0.116	-0.376 ***
	(1.288)	(0.0979)	(0.0702)
Tlc	5.151	-0.0805	0.362 **
	(3.243)	(0.256)	(0.181)
Total Public	-2.189 ****	0.0246	-0.190 ***
	(0.833)	(0.0644)	(0.0432)
Local	2.264 *	0.214 **	0.584 ***
	(1.268)	(0.0990)	(0.0698)
Federal	5.344 ***	-0.131	0.219 ***
	(1.116)	(0.0870)	(0.0548)
Observations	2,836	2,953	2,145
R-squared	0.095	0.006	0.620

Note: The data refer to 2005.
The dependent variable in the first regression is EBITDA, in the second regression is Labour Cost/Operating Revenues, in the third regression is Value Added/Employees. GDP is Country's Gross Domestic Product. Total Assets is dimension variable of GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government. Federal is an institutional dummy that takes value of 1 if the country considered has a federal structure and it takes value of 0 if the country considered has a not federal structure.
Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Table 27: Debt Ratio and Labour Intensity Regression Analysis with federal_central and federal_local dummies.

COEFFICIENT	DEBT RATIO	LABOUR INTENSITY
Constant	-0.252	3.078 ***
	(0.595)	(0.537)
GDP	0.0873 **	-0.323 ***
	(0.0339)	(0.0304)
Operating Revenues	-0.0919 ***	-0.169 ***
	(0.0138)	(0.0124)
Utilities	0.0594	-0.0844
	(0.0945)	(0.0856)
Transports	0.0361	0.833 ***
	(0.0962)	(0.0851)
Manufacturing	0.171 *	0.729 ***
	(0.0979)	(0.0845)
Tlc	0.0648	0.334
	(0.269)	(0.232)
Total Public	-0.0159	0.401 ***
	(0.0668)	(0.0595)
Federal_Local	-0.190	-0.994 ***
	(0.123)	(0.109)
Federal_Central	-0.0113	-1.011 ***
	(0.290)	(0.265)
Nofederal_Local	0.0755	-0.734 ***
	(0.106)	(0.0942)
Observations	3,244	3,485
R-squared	0.017	0.373

Note: The data refer to 2005.
The dependent variable in the first regression is Debt Ratio, in the second regression is Labour Intensity. GDP is Country's Gross Domestic Product. Operating Revenues controls for the size of GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government. Federal_Local is a dummy that takes value of 1 if an enterprise has Local Government shareholder *and* it operates in a federal country and it takes value of 0 otherwise. Federal_Central is a dummy that takes value of 1 if an enterprise has Central Government shareholder *and* it operates in a federal country and it takes value of 0 otherwise. Nofederal_Local is a dummy that takes value of 1 if an enterprise has Local Government shareholder *and* it operates in a not federal country and it takes value of 0 otherwise
Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Table 28: Ebitda, Labour Cost/Operating Revenues and Value Added/Employees Regression Analysis with federal_central and federal_local dummies.

COEFFICIENT	EBITDA	LABOUR COST/OPERATING REVENUES	VALUE ADDED/EMPLOYEES
Constant	25.87 ***	0.733	-5.689 ***
	(7.576)	(0.580)	(0.440)
GDP	-1.849 ***	-0.00890	0.329 ***
	(0.428)	(0.0329)	(0.0239)
Total Assets	2.278 ***	-0.0214	0.246 ***
	(0.177)	(0.0135)	(0.00981)
Utilities	1.210	-0.253 ***	-0.0961 *
	(1.150)	(0.0907)	(0.0563)
Transports	-5.418 ***	-0.0370	-0.377 ***
	(1.185)	(0.0918)	(0.0595)
Manufacturing	-4.679 ***	-0.115	-0.377 ***
	(1.288)	(0.0979)	(0.0701)
Tlc	5.187	-0.0843	0.351 *
	(3.244)	(0.256)	(0.181)
Total Public	-2.217 ***	0.0279	-0.186 ***
	(0.834)	(0.0645)	(0.0433)
Federal_Local	7.534 ***	0.0912	0.820 ***
	(1.528)	(0.119)	(0.0797)
Federal_Central	2.916	0.143	0.604 ***
	(3.628)	(0.276)	(0.193)
Nofederal_Local	2.000	0.245 **	0.629 ***
	(1.322)	(0.104)	(0.0729)
Observations	2,836	2,953	2,145
R-squared	0.096	0.007	0.621

Note: The data refer to 2005.
The dependent variable in the first regression is EBITDA, in the second regression is Labour Cost/Operating Revenues, in the third regression is Value Added/Employees. GDP is Country's Gross Domestic Product. Total Assets controls for the size of the GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government. Federal_Local is a dummy that takes value of 1 if an enterprise has Local Government shareholder *and* it operates in a federal country and it takes value of 0 otherwise. Federal_Central is a dummy that takes value of 1 if an enterprise has Central Government shareholder *and* it operates in a federal country and it takes value of 0 otherwise. Nofederal_Local is a dummy that takes value of 1 if an enterprise has Local Government shareholder *and* it operates in a not federal country and it takes value of 0 otherwise
Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Analyzing the individual indicators, we can see that:

- The debt ratio, as with previous estimates, is only minimally explained by the variables used for the regressions (*R-square* = 1.7%). However, it appears evident that public enterprises operating in federally-structured countries tend to have a significantly lower debt level.

- Labour intensity seems to depend heavily on the ownership structure of the enterprises in our sample. Labour intensity is lower in federal States (both for local enterprises and for State owned ones), while in other countries local public ownership is correlated to lower labour intensity. Thus it appears that the labour hoarding phenomenon is stronger in State owned enterprises (with the exception of the federal States, namely Austria, Belgium and Germany).[36] Because we have included the main sector variables in our regressions, the composition effect (centrally owned and locally owned enterprises belonging to different sectors) should not be considered responsible for this result.

- The EBITDA value is very interesting, however. Table 26 shows that both the local component and the countries' federal structure impact positively on this index. Enterprises that have local public institution shareholding and operate within federal countries show significantly higher profitability, as can be seen even more clearly in Table 27. Enterprises with by local public institution shareholding in federal States operate at

---

[36] This has also been demonstrated through a regression test that shows a positive and significant connection between by central Government shareholding in non-federal countries and level of labour intensity.

greater profitability, while local institution shareholding and operating in non-federal or federal States with central public institution shareholding has no significant effect. Therefore, what generates greater profitability is not the fact of having local versus central shareholding. Instead, local Government shareholding within federal States, rather than local shareholding in the remaining countries, is significantly positive in terms of profitability.

- The labour cost on operating revenues tendency presents interesting results. Table 26 emphasises what was already seen in table 24 - the positive relationship between the local component and the index value itself. (Enterprises with local Government shareholding tend to use a higher share of earnings to pay wages.) However, no significant relationship with the countries' institutional structure (federal) is seen. Table 28 allows us to clarify this: local Government shareholding in non-federal States brings about a higher "waste" of earnings used to pay wages. Whatever public institution shares in the enterprises in federal countries (central or local), this is not enough to significantly influence the index value. In countries which have less local autonomy in terms of fiscal discipline and lack a federal structure, local public shareholding leads to inefficiency within enterprises.

- Finally, value added per employee is significantly influenced by all four variables introduced. The only case in which this positive connection is not verified is that in which public enterprises operate in non-federal States, with central public institution shareholding.

The framework that emerges from these last regressions is more elaborated. For enterprises with public shareholding, local public

institution shareholding has much more significant effects than by central public institution shareholding, but this has an even higher value if we analyse enterprises operating within federally-structured countries, compared to the "rest of the world."

This final analysis confirms that having a federal structure also affects the performance of the enterprises considered in our sample. As already stated, the essence of the federal structure consists in giving local public institutions more autonomy in various areas. Our data show that federal Governments' higher fiscal discipline brings more virtuosity to local public institutions. This can be expressed in terms of higher profitability or greater value added and lower labour intensity for the public enterprises under consideration. In other words, what counts for enterprises is not the fact of local public institutions' shareholding, but their shareholding while at the same time operating within federally-structured countries, for which fiscal discipline is intrinsic.

6. Italy in the European context

6.1 Introduction

At this point a more specific analysis regarding Italy will be carried out. Many studies have been made regarding public shareholding in Italy. Among the most recent, the one that clearly stands out is by Bortolotti, Pellizzola and Scarpa (2007).[37] This is one of a few studies that has also systematically considered local and regional institutions shareholding in enterprises.

The primary objective of their analysis was to evaluate public capitalism's importance within the Italian economy at this time, concentrating most of their attention on municipal capitalism, which the authors define as control and ownership of enterprises by local public institutions.

Their study contains several parts: a general analysis shows how public shareholding in enterprises is situated within the country. Then the authors evaluate the sectors in which this shareholding is most important. Subsequently they analyse these sectors using indices similar to the ones used in this research, regarding the financial performance of enterprises. Finally, they show how the public presence contributes to the creation of the GNP on the local level.

Based on their results obtained, it is now interesting to evaluate how Italy is positioned within the panorama of European public

---

[37] Another study of the same subject was made by the Civicum Foundation (2007), which examined 35 enterprises with town management, from the largest Italian towns.

shareholding – in other words, what merits analysis here is a comparison of the results obtained by Bortolotti, Pellizzola and Scarpa with those of other European countries, in order to determine whether Italian public shareholding has distinctive characteristics compared to the rest of Europe.

It should be emphasized that in the study they carried out, the criteria for inclusion and means used for researching the data were different from those used here. For this reason, in comparing some of the sample data in this research with theirs, some things may not coincide.

Our sample data clearly show that Italy is one of the countries with the most enterprises with public shareholding. It is in fourth place for number of companies, preceded by Germany and France for Western countries and by Poland for the East. (It is worth emphasising that although Italy is criticized as a country in which the public still has too much importance, at the European level there are countries where this phenomenon is even more widespread.).

This data are very significant, because they show that the public presence in the Italian economy still has a role worthy of interest, which is more important compared not only to larger countries but also to those that are less developed economically (and perhaps even in the transitional phase) where the public presence can be better justified as an economic stimulus.

The number of Italian public enterprises is significant in absolute terms and has a strong impact on the total number of European enterprises, representing 10% of them.

If the data are significant in aggregate terms, the data regarding local Italian public shareholding are even more significant. Of 538 Italian public companies present in the sample, local

institutions have shares in 447 of them, amounting to 20% of the total local shareholding in Western European.

Besides the numerical impact, Italian public shareholding is relevant also in terms of total assets, operating revenues and number of employees. For these values, Italian enterprises represent respectively 16%, 13% and 11% of the European total.

These preliminary data seem to confirm what emerged from the already-mentioned study of Italian municipal capitalism (Bortolotti, Pellizzola and Scarpa, 2007). They emphasize not only the degree to which public shareholding is still rooted within the Italian economy, but also how this impacts on an European evaluation, with greater attention to its municipal component.

Having established that public intervention in the Italian economy is still very important numerically, we want to evaluate how this influences the enterprises' performance levels, comparing their results with those of other European enterprises. This comparison was not possible for Bortolotti *et al* (2007), who were working solely with Italian data.

More specifically, our intention is to verify whether the public shareholder presence within an Italian enterprise has the same effects as those shown in other European enterprises. Furthermore, we want to verify whether there is a correspondence between the sectors in which public enterprises are more likely to be found, or whether in Italy sectors emerge in which public shareholding is more likely. Finally, we want to compare whether this is systematic in terms of performance or whether there are significant differences.

The only way to answer all these questions is to carry out an analysis comparing the results achieved at the European level to those specific to Italy.

6.2 A sector-by-sector analysis

Beginning with the evaluation regarding the sector distribution of public enterprises within Italy, Bortolotti, Pellizzola and Scarpa have shown that the sector with the highest absolute concentration of public capital is undoubtedly that of utilities. Their data show that on the aggregate level utilities numerically represent about half of the enterprises with public shareholding, with a notable prevalence of local shareholding. The division among the utilities sub-sectors, on the other hand, appears to be rather balanced.

On the European level, the same distribution has been noted. The utilities sector is among those with the highest concentration of enterprises, especially in the electricity sector.

Therefore, the data regarding Italy are consistent with the rest of Europe. The strong public presence within the public utility sectors can be seen even at the European level.

However, a distinctive element concerns the other sectors, which show a strong public concentration on the European level. While in Italy the public presence in these traditionally competitive areas is almost irrelevant, representing 21% of total enterprises overall (7% in terms of total assets), at the European level the situation is different.

Table 5, described in section 4.2, shows that the services sector, together with manufacturing and to a lesser degree trade and construction, include the highest number of public enterprises. The most important data regard services, which in aggregate terms include 1,349 companies. 24% of the total of European public enterprises work within the services sector.

The transportation sector, on the other hand, shows an element of continuity between the Italian and the European analysis. The European transportation sector enterprises with public capital carry out a fundamental role, impacting on the economy for about 17%. At the Italian level, this value is higher but concerns only the enterprises with local shareholding. In order to make the comparison, the impact on the total European enterprises with local shareholding in the transportation sector has to be identified. This data, about 6%, show a distinct prevalence for the local transportation sector.

In conclusion, comparing the data we can see that within the Italian economic panorama the transportation sector has a higher percentage of public shareholding compared to the rest of Europe. At the same time, however, both in Italy and in the other countries under consideration, the breakdown of the public presence among transportation sub-sectors remains almost identical. Analyzing the local European scenario, we see that within the transportation sector, local transportation has the highest public presence.

If the same evaluation is carried out on total assets and number of employees, it becomes evident that in terms of total assets the most important sector on the European aggregate total is utilities (22%). In terms of number of employees, on the other hand, the sector that absorbs the highest number of workers at the aggregate level is transportation (17%). Italy is in line with the European values in this area. The transportation sector turns out to be the one most able, in absolute terms, to absorb the most employees, equal to 50% of the total.

After this preliminary sector comparison of Italian and European enterprises with public shareholding, it makes sense to continue by evaluating whether Italian enterprises are in line with the rest

of Europe (specifically Western European countries) in terms of performance values.

The analysis of table 15 in section 5.2, more particularly the tests carried out on the averages and medians, allows us to more closely evaluate this aspect.

Table 15 reports all the financial indices calculated, subdivided by country within the two macro-areas into which Europe can be divided – East and West.

At the aggregate level, considering enterprises with central and local Government shareholding, some important considerations can be made.

Italy represents values very near the average for almost all the indices considered. Compared to the Western countries, the only discordant data is that regarding net income. This can in part be justified by the presence of two highly distorting values, above all that of Luxembourg and (to a lesser degree) the Netherlands, and in part because in this table the aggregate indices are calculated, without distinguishing by sectors. This last aspect, as has already been emphasized, can bring about the composition phenomenon for enterprises working in profoundly varied sectors and with different operational and income levels, which can alter the net results of the analysis.

For this reason, table 16 in section 5.2 identifies the same indices distributed among the various sectors. Comparing these data with those obtained on the Italian level, this confirms that one of sectors with an higher earnings levels is utilities. At the aggregate level net annual income per employees is 145.46 Th. Euros. This high value is principally due to enterprises with State shareholding, rather than those with local shareholding. Table 17 in section 5.2 shows this, emphasizing that for some specific sectors the central public component may play a more

incisive role in the aggregate data. Furthermore, among the utilities micro-sectors the most profitable among enterprises characterised by central shareholding is electricity, while among enterprises with local shareholding the most profitable is gas.

Another sector that shows strong earnings is oil and mining. Also in this case, the principal component is clearly the State.

Two final considerations concern the indices of profitability in the transportation and services sectors. Both show systematic losses at the aggregate level, centrally and locally. To justify this the cost of labour can be evaluated. In both sectors it has a strong impact, but not so much as to explain all these losses.

In the transportation sector negative profitability is to some degree predictable, but the generation of losses within the services sector is inexplicable. Even though as we have seen this contains highly varied activities, it is still among those sectors where enterprises often operate in competitively and so it is much more difficult to explain such high losses.

Bortolotti, Pellizzola and Scarpa arrived at the same result. This means that Italian profitability divided among the various economic sectors perfectly follows the general European pattern. For the data regarding the debt ratio, the ability to use financial markets, Italy is perfectly within the European average for the individual sectors.

To more effectively measure Italy's position within the European economy, tests were carried out on the difference between the mean and median. Comparing Italy to the average of the other countries in this analysis, some significant differences can be noted.

Within the utilities sectors, previously was said to be the predominant sector for Italian municipal capitalism, Italy's data are not always positive. Even if this particular Italian market

area represents the maximum source of profitability for enterprises with public shareholding, this is not always seen in the European comparison.

Stata Panel of Italian Utilities[38] shows that on average Italy has a higher capacity of indebtedness than the Western countries' average, but at the same time it shows negative signs of profitability.

This means that the capacity of Italian enterprises that offer public utility goods to generate earnings is less than the capacity of the rest of Western Europe. This data is confirmed both in terms of profitability and operative efficiency with a discrete level of significance.

There is also a meaningful difference in the relationship between labour cost and operating revenues. Compared to other European countries, Italy uses a higher percentage of earnings to pay wages.

Some of the considerations just made are also true for the transportation sector (Stata Panel of Italian Transports).

Also in this case, comparing Italy to the European average, we see more limited net income values and like utilities, a particularly high amount of earnings used to pay wages. In this case we can see a significant difference in labour cost. The only discordant element in the two sectors under analysis lies in the higher profitability of the transportation sector compared to the European average. The data regarding EBITDA are in fact strongly positive.

Concluding this comparative analysis of the Italian results with those of the European panorama, we can seen that in terms of the sub-division of public shareholding among the various

---

[38] This table can be seen in Appendix.

sectors, Italy is perfectly in line with the other countries. Different evaluations are made, on the other hand, for performance levels within specific sectors. The most significant example is surely that regarding the utilities sector, for which strongly positive data was found in the Italian analysis. This positive situation, however, fails to emerge when the Italian data are compared the European data. The profitability of the Italian utilities sector, compared to that of other countries, is in fact below average.

In contrast, as stated previously, Bortolotti, Pellizzola and Scarpa have identified the major losses of Italian public shareholding within the transportation sector, emphasizing above all the high labour cost.

These data are confirmed and strengthened by tests carried out in this research, which shows significance even in terms of the European average. Even though this sector presents significant losses in Italy, in Western Europe the figures are even worse. Regarding the negative profit value for this sector, the European scenario shows a very different picture. The Italian transportation sector emerges as one of those that on average present higher profitability.

On the other hand, the same analysis carried out on the two most competitive sectors, communications (Tlc) and manufacturing, does not show significant elements, except in terms of the profitability and labour cost levels found in the manufacturing sector. The Italian data show that these sectors have very high profit per employee, thus becoming a strongly productive sector, at the same time characterised by a high labour cost.

In the European comparison, this last aspect is not confirmed. Compared to other Western Europe countries, the Italian cost of labour within the manufacturing sector is on average lower than

the rest of the continent; while the opposite is true for the profit level. The Italian manufacturing sector appears to be the only one among Western European countries to generate strong profits, noticeably higher than the European average.

This last aspect surely deserves attention, because it means that although manufacturing is a sector that is normally competitive, in Italy the public presence in the management of enterprises operating in this field is not negative. In fact the public manufacturing enterprises seem to be the best at the European level.

A final comparison regards the contribution of Italian public enterprises to the creation of national and local GNP, comparing these data to the European macro-economic analysis.

The study of Bortolotti, Pellizzola and Scarpa shows that at the Italian national level 1% of the GNP is generated by about 400 public enterprises with local institutions as shareholders. In some Italian regions these enterprises manage to contribute to the GNP values exceeding 6% and 2%.

In our work, even if the criteria used for the same type of analysis are different, the data are in line with what has just been stated.

Tables 8 and 9, analysed in section 4.3.1, show how Italy is positioned within the European scenario in terms of contribution to the national GDP by enterprises with public shareholding. The precise data, about 5.3%, confirm what has been found by the authors cited above. The value is different because in this case all enterprises with public shareholding are being considered. Analyzing their single components, on the other hand - local and central shareholding - we see that this value is led by the central component. However, the local component, impacting for 1% on

the GDP and perfectly within the average values of the other countries, should not be underestimated.

Finally, in terms of municipal capitalism's contribution to the GDP of the regions in which enterprises with local public shareholding are located (table 10, section 4.3.1), this fully confirms what was found in the above-cited study. These enterprises create a higher incidence of value added, especially in Northern Italian regions, with maximum level in Valle d'Aosta, even though on average these data are in line with those of the largest European countries.

6.3 Italy v. Europe: a regression analysis

The analyses carried out up to now regarding Italy's role and positioning within the European scenario show a certain alignment of our country with other Western European countries. All the tests that were carried out have allowed us to measure what Italy's position in relation to the other countries would be, evaluating the performance of enterprises with public shareholding within individual market sectors in which they operated. For example, we have compared the performance levels of Italian utilities to those of other countries. To have a more global vision of how Italy is positioned on the European scene in terms of performance by enterprises with public institution shareholding - that is, how municipal and central capitalism in Italy are perceived in terms of the global nature of public shareholding in enterprises at the European level - we must carry out some measures in which "the Italian element" can be used as the control variable.

To do this, the regressions described in the preceding chapter have again been carried out, adding Italy as dummy variable. Tables 29 and 30 show the results (2005).

Table 29: Debt Ratio and Labour Intensity Regression Analysis with Italy dummy.

COEFFICIENT	DEBT RATIO	LABOUR INTENSITY
Constant	0.283	4.008 ***
	(0.556)	(0.503)
GDP	0.0581 *	-0.373 ***
	(0.0317)	(0.0286)
Operating Revenues	-0.0911 ***	-0.172 ***
	(0.0139)	(0.0125)
Utilities	0.0428	-0.105
	(0.0956)	(0.0866)
Transports	0.0399	0.828 ***
	(0.0970)	(0.0859)
Manufacturing	0.168 *	0.733 ***
	(0.0980)	(0.0847)
Tlc	0.0964	0.357
	(0.269)	(0.232)
Total Public	-0.0162	0.419 ***
	(0.0671)	(0.0598)
Local	-0.0203	-0.770 ***
	(0.101)	(0.0893)
Italy	0.155	0.276 **
	(0.119)	(0.109)
Observations	3,244	3,485
R-squared	0.015	0.371

Note: The data refer to 2005.
The dependent variable in the first regression is Debt Ratio, in the second regression is Labour Intensity. GDP is Country's Gross Domestic Product. Operating Revenues controls for the size of GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government. Italy is a country dummy that takes value of 1 if Italy is the considered country and it takes value of 0 otherwise.
Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Table 30: Ebitda, Labour Cost/Operating Revenues and Value Added/Employees Regression Analysis with Italy dummy.

COEFFICIENT	EBITDA	LABOUR COST/OPERATING REVENUES	VALUE ADDED/EMPLOYEES
Constant	12.98 *	0.939 *	-6.403 ***
	(7.088)	(0.542)	(0.418)
GDP	-1.154 ***	-0.0208	0.365 ***
	(0.402)	(0.0308)	(0.0227)
Total Assets	2.288 ***	-0.0190	0.252 ***
	(0.178)	(0.0135)	(0.00974)
Utilities	1.515	-0.243 ***	-0.0730
	(1.168)	(0.0919)	(0.0571)
Transports	-5.545 ***	-0.0147	-0.360 ***
	(1.198)	(0.0925)	(0.0601)
Manufacturing	-4.574 ***	-0.116	-0.369 ***
	(1.292)	(0.0980)	(0.0702)
Tlc	4.398	-0.0603	0.329 *
	(3.249)	(0.256)	(0.181)
Total Public	-2.284 ***	0.0190	-0.202 ***
	(0.840)	(0.0648)	(0.0435)
Local	3.664 ***	0.190 *	0.668 ***
	(1.255)	(0.0976)	(0.0687)
Italy	-3.144 **	-0.0586	-0.252 ***
	(1.402)	(0.110)	(0.0655)
Observations	2,836	2,953	2,145
R-squared	0.090	0.006	0.620

Note: The data refer to 2005.
The dependent variable in the first regression is EBITDA, in the second regression is Labour Cost/Operating Revenues, in the third regression is Value Added/Employees. GDP is Country's Gross Domestic Product. Total Assets controls for the size of the GOEs. Utilities, Transports, Tlc and Manufacturing are sector dummies referring to SIC codes. Total Public is a dummy that takes value of 1 if a firm is totally public owned. Local is a dummy that takes value of 1 when a firm is participated by Local Government and it takes value of 0 if a firm is participated by Central Government. Italy is a country dummy that takes value of 1 if Italy is the considered country and it takes value of 0 otherwise.
Standard errors are in parentheses and *_**_*** denotes statistical significance at 10, 5 and 1 % levels respectively.

Analyzing these measures we see that the Italian case is not at all positive in terms of performance in the European scenario. While the preceding tests on averages and medians showed a certain homogeneity compared to the European situation in terms of

profitability or level of indebtedness, or even in terms of the relationship between cost of labour and operating revenues, studying the regressions show what the effect of operating in Italy has been, taking into consideration the sectors in which they operate, enterprise size and type of control (elements "captured" by the relevant variables in the regression). Given all the other control elements – country wealth, enterprise size, activity sectors, control structure and type of public institution - being in Italy has negative consequences, above all in terms of profitability and value added per employee. The data show that the relationship between the measures of ebitda and value added per employee are inversely correlated to the Italy dummy. The fact of operating in Italy negatively influences profit level and value added for enterprises with public shareholding. Another strongly significant element is labour intensity. For this index as well, the Italian result is not at all encouraging. Italy shows a higher employment level, in terms of capitalization of the enterprises, compared to the rest of Europe. The very fact of operating in Italy is positively correlated with the intensity of labour for enterprises with public shareholding. These findings support the suspicion that in Italy public enterprises are characterized by higher labour hoarding.

The regression estimates show quite clearly that for public enterprises operating in Italy is in itself a negative factor. This is true for some of the indices analysed, although for indebtedness level or relationship between labour cost and operating revenues being in Italy is not significant. A positive relationship between the Italian variables and the indebtedness level can be seen, but this relationship's value is not significant. The Italian indebtedness level is thus in line with the rest of Europe. The same appears to be verified for labour cost on revenues, even though in this case being in Italy has a negative effect – Italian public revenues use fewer earnings to cover the costs of wages.

In terms of this last factor, the tests on averages and medians show a higher erosion of earnings in order to cover wages within the utilities sector compared to other Western European countries. Similarly, they show a more contained labour cost for the manufacturing sector.

The regression analysis considers these two sectors together, as well as the transportation and communications sectors. This allows us to evaluate the overall effect. The simultaneous analysis of the four sectors listed above, made possible through the multivariate regression, allows us to obtain an overall result. The data regarding the factor of operating in Italy are negatively correlated to the relationship between labour cost and revenues. Even though the value is not significant, this leads us to conclude with some certainty that although labour cost within the manufacturing sector in Italy is lower compared to the rest of Europe, the labour cost within the utilities sector will be high enough to justify this overall negative value. The discordant result between the tests on averages and medians and the regression analysis is also shown for profitability. The regression shows in a very precise way that the Italy variable reacts negatively on the Ebitda index. Previous tests showed different signs, above all in two of the most relevant Italian sectors. Faced with significant negativity for the Italian utilities sector compared to the rest of Western Europe, we have found a strong positive in the transportations sector. This sector is much more profitable in Italy than in the rest of Europe. On the other hand, the regression analysis shows that with other variables taken as a given, Italy as a country has a negative effect, in this case with a certain significance (5%). As in the preceding case, then, we can hypothesize that the positive value in the transportations sector is in some way annulled by the strong negative value in the utilities sector. This sector's profitability is not strong enough to counter-balance that of utilities.

Concluding, therefore, the analysis of the Italian data compared with those from the rest of the countries in the European sample shows that, as already emphasized in preceding works, the role of public shareholding is at present an important fact in the Italian economic scenario.

But if on the one hand public shareholding in Italian enterprises holds first place numerically compared to other European countries, in terms of the sectors in which this is rooted, on the other hand, some differences have been found in terms of the performance of the Italian public enterprises. While the analysis of single sectors suggests that our country is aligned in terms of profitability with the other countries considered, the multivariate analysis showed some factors degrading Italy's role within the European scenario, above all in terms of profitability and labour intensity. Suspicions of particular inefficiency in Italian public sectors thus find some support.

Conclusions

This thesis evaluated and assessed the public presence in the economy and European markets, for both central and local administrations. Data analyses were performed with descriptive statistics, followed by a discussion of the results.

A distinctive feature was the number of countries considered, together with the differences in the analysed sample.

To our knowledge, there are no studies that estimate the financial performances and impact of enterprises partially owned by public and local public administrations.

This work included capital companies from many countries, differentiating among Government levels and analyzing both the State and the Municipal capitalism.

Contrary to expectations, Governments own many share stakes in the companies.

This holds not only for companies in essential or strategic sectors, but also those in competitive areas.

Concerning the services sector, the central and local public presence is very high. In Europe-27 countries, 1,349 public enterprise belong to the services sector.

These enterprises also have a significance presence in telecommunications, manufacturing, trading and real estate.

The scenario is not easy to explain, because the public presence is usually considered a likely obstacle to concurrency and growth.

Even without verifying this hypothesis, at a European level the importance of public enterprises differs significantly.

Major differences can be observed comparing Eastern and Western European countries.

The latter have public enterprises with higher productivity, profitability and indebtedness than Eastern Europe enterprises.

Thus, beyond the economics discussions raised during the analyses (financial market weakness, old infrastructures, lower technological development), the policies enforced by public authorities in the two areas differ significantly.

In Eastern Europe, policies are still related to previous economic-social lobbies, highlighted by a big presence of the central State. For instance, in Poland out of 1,109 enterprises, 1,076 are held by the Government. In Bulgaria 520 of 525 enterprises are held by the Government. Conversely, in Western Europe public enterprises can be seen as real economic entities with their own strategic relevance.

This claim is confirmed by the high number of enterprises with shareholding by various Government levels within major European countries. Even in countries with significant differences at a political-institutional level, this also influences market interpretation and reforms. For instance, these countries have undergone various privatisation processes.

Furthermore, such enterprises exercise major influence over the GDP at a national and local level. We observed at the aggregate level that public enterprises comprise 4% of the GDP; in some countries this ratio reaches 9%.

Our research reports that public enterprises are still a major factor in European countries' economies. This is a starting point for further studies that can clarify the reasons of this phenomenon.

The analysis leads to many questions:

1. At a country level, is it feasible to consider substitutability and complementarities between public and private enterprises?

2. Do European public enterprises have different performance indices compared to those of mixed ownership enterprises?

3. Is private presence in share stakes of partially public enterprises a cause or an effect for specific enterprise performances indices? In other words, do private partners enter a public enterprise because is already has a high profitability, or is the higher efficiency of mixed enterprises (if any) compared to wholly public enterprises due to the private partners?

With further research the above questions can be answered. This thesis is an effective starting point for further analysis.

References

Bel, G. (2006). "Against the Mainstream: Nazi Privatization in 1930s Germany", *IREA Working Papers*.

Boardman, A. E., and A. R. Vining, (1989). "Ownership and Performance in Competitive Environments: A Comparison of the Performance of Private, Mixed, and State-Owned Enterprises", *Journal of Law & Economics*, Vol. XXXII., 1-33.

Bortolotti, B., and D. Siniscalco, (2004). "*The Challenges of Privatization: an international Analysis*", Oxford, Oxford University Press.

Bortolotti, B., and J. D'Souza, and M. Fantini, and W.L. Megginson, (2002). "Privatization and the Sources of Performance Improvement in the Global Telecommunications Industry", *Telecommunications Policy*, Vol. 26, pp.243–68.

Bortolotti, B., and J. D'Souza, and M. Fantini. and W. L. Megginson, (2001). "Sources of Performance Improvement in Privatized Firms: A Clinical Study of the Global Telecommunications Industry", *Fondazione Eni Enrico Mattei,* Nota di Lavoro.

Bortolotti, B., and L. Pellizzola, and C. Scarpa, (2007). "Il Comune Azionista: un'analisi empirica del capitalismo municipale in Italia", *Mercato Concorrenza Regole*, Anno IX, No. 3.

Bortolotti, B., and M. Faccio, (2004). "Reluctant Privatization", *Fondazione Eni Enrico Mattei;* Nota di Lavoro 130.2004.

Bortolotti, B., and P. Pinotti, (2003). "The Political Economy of Privatization", *Fondazione Eni Enrico Mattei*, Nota di Lavoro 45.2003.

Bortolotti, B., and V. Milella, (2006). "Privatization in Western Europe Stylized Facts, Outcomes, and Open Issues", *Fondazione Eni Enrico Mattei*, Nota di Lavoro 124.2006.

Bös, D. (1988)." Public Enterprises, in Theory and in Practice", *European Economic Review*, 32, pp. 409-414.

Bös, D. (1989). *Public Enterprise Economics: Theory and Application (2nd Ed.)*. New York: North Holland.

Bös, D., and W. Peters, (1988). "Privatization, Internal Control, and Internal Regulation", *Journal of Public Economics* Vol. 36, pp. 231-258. North-Holland.

Boycko, M., and A. Shleifer, and R. W. Vishny, (1996). "A Theory of Privatization", *The Economic Journal*, Vol. 106, No.435, pp. 309-319.

Claude, D., and J. Hindriks, (2005). "Strategic Privatization and Regulation Policy in Mixed Markets", *CORE Discussion Paper*, No. 2005/15.

Cornes, R., and M. Sepahvand, (2005). "Market distortions and public enterprise strategies in an international mixed oligopoly", *Munich Personal RePEc Archive* No. 3702.

Cremer, H., and M. Marchand, and J-F. Thiesse, (1989). "The Public Firm as an Instrument for Regulation an Oligopolistic Market", *Oxford Economic Papers*, Vol. 41, No. 2, pp. 283-301.

D'Souza, J., and W. L. Megginson, (1999). "The Financial and Operating Performance of Newly Privatized Firms in the 1990s", *Journal of Finance*, Vol. 54, pp. 1397-1438.

De Fraja, G., and F. Delbono, (1989). "Strategies of a Public Enterprise in Oligopoly", *Oxford Economic Papers*, Vol. 41, No. 2, pp. 302-311.

Dewenter, K., and P. H. Malatesta, (2001). "State-Owned and Privately-Owned Firms: An Empirical Analysis of Profitability, Leverage and Labor Intensity", *The America Economic Review*, Vol. 91, No. 1, pp. 320-334.

Dyck, I.J.A., and K.H. Wruck, (1998). "Organization Structure, Contract Design and Government Ownership: A Clinical Analysis of German Privatization", *Harvard Business School Working Paper*, No. 97-007.

Estrin, S., and J. Hanousek, and E. Kočenda, and J. Svejnar, (2007). "Effects of Privatiztion and Ownership in Transition Economies", *Cerge-Ei Discussion Paper* No. 2007-181.

Florio, M. (2002). "A State without Ownership: The Welfare Impact of British Privatizations 1979-1997". *Working Paper* Series No. 24-2002.

Florio, M. (2004). "*The Great Divestiture. Evaluating the Welfare Impact of British Privatization*", The MIT Press (Mass), 2004.

Fondazione Civicum (2007). "Le società controllate dai maggiori comuni italiani: bilanci", Milano.

Fujiwara, K. (2007). "Partial Privatization in a Differentiated Mixed Oligopoly", *Journal of Economics*, Vol. 92, No. 1, pp. 51-65.

Grossam, S. J. and O. D. Hart, (1986). "The costs and benefits of ownership: a theory of vertical and lateral integration", *Journal of Political Economy*, Vol. 94, pp. 691-719.

Harris, R. G., and E. Wiens, (1980). "Government Enterprises: An Instrument for the Internal regulation of Industry", *The Canadian Journal of Economics*, Vol.13, No. 1, pp. 125-132.

Hart, O., and A. Shleifer, and R. W. Vishny, (1997). "The Proper Scope of Government: Theory and an Application to Prisons", *The Quarterly Journal of Economics*, Vol. 112, No. 2, pp.1127-1161.

Hinds, S., and N. Sanchez, and D. Schap, (2004). "Public Enterprise: Retrospective Review and Prospective Theory". *Handbook of Public Finance*; pp. 277-300.

Kumbhakar, S.C., and L. Hjalmarsson, (1996). "Relative performance of public and private ownership under yardstick competition: electricity retail distribution", *European Economic Review*, Vol. 42, pp. 97-122.

Laffont, J. J., and J. Tirole, (1991). "Privatization and Incentives", *Journal of Law, Economics and Organization*, Vo. 7, pp. 84-105.

Matsumura, T. (1998). "Partial Privatization in Mixed Duopoly", *Journal of Public Economics*, Vol. 70, pp. 473-483.

Megginson, W.L., R.C. Nash, and M. van Randenborgh, (1994). "The Financial and Operating Performance of Newly

Privatized Firms: An International Empirical Analysis", *Journal of Finance*, Vol. 49, pp. 403-452.

Meggison, W. L., and J. M. Netter, (2001). "From State to Market: A Survey of Empirical Studies on Privatization", *Journal of Economic Literature*, Vol. XXXIX, pp. 321-389.

Merrill, W. C., and N. Schneider, (1966). "Government Firms in Oligopoly Industries: A Short-Run Analysis", *The Quarterly Journal of Economics*, Vol. 80, No. 3, pp. 400-412.

Myers, S., (1984). "The Capital Structure Puzzle", *Journal of Finance*, Vol. 39, No. 3, pp. 579-592.

Parker, D., and C. Kirkpatrick, (2005). "Privatization in Developing Countries: A Review of Evidence and the Policy Lessons", *Journal of Development Studies*, No. 41: 4, pp. 513-541.

Perotti, E. (1995). "Credible Privatization", *The American Economic Review,* Vol. 85, No. 4, pp. 847-859.

Schimitz, P. W. (2000). "Partial Privatization and Incomplete Contracts: A Proper Scope of Government Reconsidered", *FinanzArchiv*, Vol. 57 (4), pp. 394-411.

Schimtz Jr., J.A. (1996). "The role played by public enterprises: How much does it differ across countries?", *Federal Reserve Bank of Minneapolis Quarterly* 20 (Spring), pp. 2-15.

Schmidt, K. M. (1996). "Incomplete Contracts and Privatization", *European Economic Review,* Vol. 40, pp. 569-579.

Shepherd, W.G. et. al. (1976). "*Public Enterprise: Economic Analysis of Theory and Practice*". Lexington, MA: Lexington Books.

Sheshinki, E., and L. F. Lòpez-Calva, (2003). "Privatization and its Benefits: Theory and Evidence", *CESifo Economic Studies*, Vol. 49, pp. 429-459.

Shleifer, A., and R. W. Vishny, (1994). "Politicians and Firms", *The Quarterly Journal of Economics*, Vol. 109, No. 4, pp. 995-1025.

Stack, H.M. (1997). "The "Colonization" of East Germany?: A Comparative Analysis of German Privatization", *Duke Law Journal*, Vol. 46, No. 5, pp. 1211-1253.

Vernon, R. (1979). "The International Aspects of State-Owned Enterprises", *Journal of International Business Studies*, Vol. 10, No. 3 pp. 7-15.

White, M.D. (1996). "Mixed Oligopoly, Privatization and Subsidization", *Economics Letters*, Elsevier; North-Holland.

Zeckhauser, R.J., and M. Horn, (1989). "The Control and Performance of State-owned Enterprises", In P.W. MacAvoy, W.T. Stanbury, G. Yarrow, R.J. Zeckhauser (eds), *Privatization and state-owned enterprises: Lessons fron United States, Great Britain and Canada*, 7-57. Boston: Kluwer Academic Publishers.

Table A1. GOEs by Country. Central v. Local. Average values.

COUNTRY	Number of GOEs	of which owned by		Listed		Unlisted		AVERAGE TOTAL ASSETS th EUR		AVERAGE OPERATING REVENUES th EUR		AVERAGE NUMBER OF EMPLOYEES	
		Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.
AUSTRIA	77	23	54	5	1	18	53	1,810,392	186,537	1,280,853	90,809	4,835	589
BELGIUM	48	32	16	3	2	29	14	1,049,806	318,509	546,397	108,396	3,447	476
BULGARIA	525	520	5	64		456	5	21,985	4,479	14,223	4,803	348	231
CYPRUS	1	1		1				323,256		319,642		2,364	
CZECH REPUBLIC	26	23	3	1		22	3	261,788	83,829	142,915	47,419	2,693	263
DENMARK	21	13	8			13	8	528,499	6,451	343,990	3,948	443	17
ESTONIA	39	33	6	1		32	6	112,099	18,522	58,399	9,785	732	505
FINLAND	58	53	5	12	3	41	2	1,114,470	1,494,517	942,768	1,030,477	2,761	5,444
FRANCE	706	598	108	15	2	583	106	1,273,436	140,539	675,931	35,933	2,651	115
GERMANY	1,125	144	981	6	12	138	969	4,002,127	468,782	2,210,408	260,336	9,089	783
GREECE	97	64	33	7		57	33	565,836	10,354	289,863	6,865	1,168	197
HUNGARY	10	8	2		1	8	1	75,112	615,937	253,349	266,681	415	4,070
IRELAND	19	19		1		18		187,715		104,153		511	
ITALY	538	91	447	6	10	85	437	4,290,385	170,629	1,935,566	82,830	6,012	457
LATVIA	9	9		1		8		126,938		112,975		1,774	
LITHUANIA	14	14		7		7		319,809		322,910		889	
LUXEMBOURG	3	3		2		1		381,622		253,192		182	
NETHERLANDS	88	60	28	4	1	56	27	2,336,801	1,263,406	1,462,602	658,447	3,517	1,430
POLAND	1,109	1,076	33	16		1,060	33	73,326	33,485	65,594	15,292	626	343
PORTUGAL	40	16	24	1		15	24	13,549	48,769	16,641	7,310	95	92
ROMANIA	415	287	128	5		282	128	55,943	2,770	26,275	1,068	609	64
SLOVAKIA	2	2				2		342,595		473,619		1,125	
SPAIN	302	51	251		1	51	250	155,335	70,630	135,422	19,785	1,913	164
SWEDEN	118	117	1	7		110	1	819,830	10,480	471,038	12,863	1,636	101
UK	259	174	85	2	7	172	78	289,820	94,049	250,730	77,455	1,925	673
TOTAL	**5,649**	**3,431**	**2,218**	**167**	**40**	**3,264**	**2,178**	**678,628**	**288,420**	**383,137**	**153,255**	**1,716**	**555**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A2. GOEs by Sector, Central v/s Local

SECTOR	Number of GOEs	of which owned by		TOTAL ASSETS th EUR		OPERATING REVENUES th EUR		NUMBER OF EMPLOYEES	
		Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.	Central Govt.	Local Govt.
AGRICULTURE	96	87	9	6,401,662	48,920	2,655,384	50,774	40,871	507
COMMUNICATIONS	90	76	14	307,581,584	5,888,077	154,679,514	3,230,059	604,709	12,680
CONSTRUCTIONS	206	128	78	4,513,968	9,238,739	2,974,532	4,566,059	36,870	27,387
FINANCE	676	268	408	95,057,969	73,131,143	44,304,107	13,946,876	213,610	42,056
MANUFACTURING	898	801	97	464,265,648	146,745,314	326,175,849	116,402,791	1,162,093	399,695
OIL and MINING	94	88	6	234,833,703	127,784,883	281,310,413	59,258,826	383,329	73,703
POSTAL SERVICES	20	20		347,725,346		101,429,942		1,366,518	
TRADE	363	277	86	41,459,760	2,834,591	43,526,284	2,869,874	99,169	22,724
TRANSPORTATIONS – of which	*956*	*649*	*307*	*296,969,058*	*51,175,285*	*119,707,371*	*20,826,119*	*988,002*	*207,963*
AIRPORTS	69	19	50	12,216,099	17,733,582	4,045,803	6,697,381	20,529	63,318
HIGHWAYS	48	31	17	514,538	7,832,417	204,837	2,163,017	6,007	7,887
LOCAL TRANSPORTS	338	185	153	7,386,794	17,604,509	3,799,148	9,165,160	71,354	119,705
RAILWAYS	48	29	19	247,713,221	1,574,673	82,566,112	959,740	716,996	9,314
TRANSPORTATION BY AIR	15	14	1	14,809,818	7,256	12,628,127	25,675	70,738	97
TRANSPORTATION SERVICES	189	163	26	4,240,783	553,748	7,744,221	271,574	42,118	1,609
TRUCKING AND WAREHOUSING	170	149	21	2,984,645	1,530,473	6,364,800	507,886	37,099	864
WATER TRANSPORTATION	79	59	20	7,103,160	4,338,627	2,354,323	1,035,686	23,161	5,169
SERVICES – of which	*1,349*	*737*	*612*	*77,525,357*	*35,060,331*	*45,556,270*	*18,555,602*	*319,148*	*174,824*
BUSINESS SERVICES	362	172	190	10,306,433	17,162,111	12,991,334	6,977,828	62,105	37,376
ENGINEERING & MGMT SERVICES	455	314	141	58,110,198	4,456,862	24,674,246	2,108,572	130,478	13,244
HEALTH SERVICES	154	93	61	651,193	7,510,386	622,889	6,334,051	34,721	90,129
OTHER SERVICES	378	158	220	8,457,533	5,930,972	7,267,801	3,135,151	91,844	34,075
UTILITIES – of which	*765*	*216*	*549*	*451,473,426*	*186,627,630*	*191,758,123*	*100,149,532*	*656,522*	*268,208*
ELECTRICITY	298	123	175	402,658,864	117,275,207	164,497,733	61,201,193	533,465	124,260
ENVIRONMENTAL SERVICES	143	18	125	751,974	9,402,746	562,440	4,461,104	2,595	37,271
GAS	109	20	89	45,490,019	9,668,175	25,335,060	9,400,538	101,368	14,695
MULTIUTILITIES	78	35	43	1,494,579	22,513,043	913,721	13,585,319	10,936	48,427
WATER SERVICES	137	20	117	1,077,990	27,768,459	449,169	11,501,378	8,158	43,555
TOTAL	**5,513**	**3,347**	**2,166**	**2,327,807,481**	**638,534,913**	**1,314,077,789**	**339,856,512**	**5,870,841**	**1,229,747**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A3. Selected Performance Indicators for Central GOEs, by Sector

SECTOR	Number of GOEs	Total assets th EUR	Average ROA	Average EBITDA	Average Operat. Revenues per employee Th EUR	Average Net Income per employee Th EUR	Average cost of employee Th EUR	Average Debt Ratio	Average Cost of employees/ope rating revenues
AGRICULTURE	87	6,401,662	-2.51%	9.91	43.04	1.46	8.03	0.41	0.24
COMMUNICATIONS	76	307,581,584	4.10%	21.74	374.18	35.07	45.88	0.60	0.27
CONSTRUCTIONS	128	4,513,968	-1.66%	2.76	352.92	89.01	20.25	0.73	0.32
FINANCE	268	95,057,969	8.20%	18.89	1734.95	743.61	57.37	0.61	0.72
MANUFACTURING	801	464,265,648	-2.43%	5.69	188.73	5.55	26.08	0.76	0.37
OIL and MINING	88	234,833,703	3.64%	11.89	4516.17	1081.92	35.94	0.64	0.25
POSTAL SERVICES	20	347,725,346	3.91%	8.48	88.03	2.25	31.90	0.76	0.49
TRADE	277	41,459,760	0.20%	5.94	2119.70	87.41	30.31	0.63	0.18
TRANSPORTATIONS - of which	*649*	*296,969,058*	*0.83%*	*6.95*	*342.82*	*27.21*	*34.45*	*0.77*	*0.31*
AIRPORTS	19	12,216,099	7.05%	18.61	302.72	37.44	37.88	0.69	0.33
HIGHWAYS	31	514,538	-4.38%	5.78	52.77	1.91	10.12	0.57	0.32
LOCAL TRANSPORTS	185	7,386,794	-0.89%	7.10	171.40	1.93	38.61	0.57	0.36
RAILWAYS	29	247,713,221	0.57%	9.69	853.75	-32.84	39.27	0.76	0.29
TRANSPORTATION BY AIR	14	14,809,818	-4.24%	12.35	156.82	-7.72	26.05	0.68	0.18
TRANSPORTATION SERVICES	163	4,240,783	0.13%	4.81	449.86	25.54	36.97	0.83	0.27
TRUCKING AND WAREHOUSING	149	2,984,645	2.92%	5.50	318.74	7.85	30.85	1.02	0.29
WATER TRANSPORTATION	59	7,103,160	4.95%	10.74	603.68	207.17	33.94	0.65	0.35
SERVICES - of which	*737*	*77,525,357*	*-2.12%*	*7.34*	*522.82*	*-7.10*	*39.94*	*0.79*	*0.56*
BUSINESS SERVICES	172	10,306,433	-3.15%	9.08	1785.56	-50.12	69.26	0.86	0.90
ENGINEERING & MGMT SERVICES	314	58,110,198	-1.01%	7.23	162.17	7.31	39.32	0.92	0.48
HEALTH SERVICES	93	651,193	-8.77%	2.61	38.96	-0.88	6.55	0.57	0.44
OTHER SERVICES	158	8,457,533	0.76%	8.57	149.75	5.90	29.53	0.55	0.42
UTILITIES - of which	*216*	*451,473,426*	*2.74%*	*19.67*	*1264.52*	*390.13*	*88.63*	*0.50*	*0.21*
ELECTRICITY	123	402,658,864	3.01%	24.54	1675.78	654.40	157.96	0.49	0.23
ENVIRONMENTAL SERVICES	18	751,974	1.69%	6.86	511.18	-0.98	23.64	0.74	0.17
GAS	20	45,490,019	6.22%	18.00	2052.80	180.10	33.14	0.58	0.07
MULTIUTILITIES	35	1,494,579	2.49%	19.72	453.05	27.29	19.92	0.42	0.13
WATER SERVICES	20	1,077,990	-0.91%	11.76	45.03	1.52	10.74	0.47	0.34
TOTAL AVERAGE	**3,347**	**2,327,807,481**	**0.03%**	**8.72**	**765.10**	**129.28**	**37.17**	**0.71**	**0.39**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk

Table A4. Selected Performance Indicators for Local GOEs, by Sector

SECTOR	Number of GOEs	Total assets th EUR	Average ROA	Average EBITDA	Average Operat. Revenues per employee Th EUR	Average Net Income per employee Th EUR	Average cost of employee Th EUR	Average Debt Ratio	Average Cost of employees/ope rating revenues
AGRICULTURE	9	48,920	2.78%	8.42	95.81	4.46	37.82	0.37	0.48
COMMUNICATIONS	14	5,888,077	-7.44%	12.94	222.88	-27.14	44.25	0.64	0.33
CONSTRUCTIONS	78	9,238,739	-2.40%	18.18	431.91	6.65	53.12	0.85	0.27
FINANCE	408	73,131,143	0.81%	26.54	896.40	132.94	62.58	0.65	0.29
MANUFACTURING	97	146,745,314	0.30%	5.05	212.78	50.00	41.08	0.86	0.27
OIL and MINING	6	127,784,883	-5.77%	0.00	201.45	21.24	34.36	0.52	0.44
POSTAL SERVICES									
TRADE	86	2,834,591	-5.03%	8.01	1,937.62	5.93	36.30	0.65	0.35
TRANSPORTATIONS - of which	*307*	*51,175,285*	*-4.42%*	*7.79*	*250.91*	*2.29*	*48.18*	*0.71*	*0.47*
AIRPORTS	50	17,733,582	4.02%	20.38	129.67	7.18	40.73	0.57	0.54
HIGHWAYS	17	7,832,417	3.22%	32.17	225.36	34.64	41.65	0.57	0.38
LOCAL TRANSPORTS	153	17,604,509	-6.20%	1.73	145.52	-5.60	36.51	0.72	0.50
RAILWAYS	19	1,574,673	0.69%	2.58	443.86	41.71	40.46	0.67	0.42
TRANSPORTATION BY AIR	1	7,256	-9.16%	1.71	264.69	-6.86	30.42	2.39	0.11
TRANSPORTATION SERVICES	26	553,748	-21.87%	-1.02	348.29	-44.36	71.15	0.64	0.34
TRUCKING AND WAREHOUSING	21	1,530,473	-5.86%	13.12	1,042.38	30.58	131.13	1.33	0.43
WATER TRANSPORTATION	20	4,338,627	-1.09%	15.87	240.29	9.34	51.71	0.52	0.43
SERVICES - of which	*612*	*35,060,331*	*-14.73%*	*5.33*	*390.53*	*110.58*	*48.24*	*0.80*	*0.66*
BUSINESS SERVICES	190	17,162,111	-8.79%	8.79	745.98	385.21	50.04	0.86	0.91
ENGINEERING & MGMT SERVICES	141	4,456,862	-35.35%	5.33	304.75	-50.29	45.40	1.05	0.46
HEALTH SERVICES	61	7,510,386	-7.25%	0.56	83.13	-6.49	45.91	0.49	0.69
OTHER SERVICES	220	5,930,972	-10.56%	3.90	223.77	-16.30	49.08	0.68	0.57
UTILITIES - of which	*549*	*186,627,630*	*2.04%*	*17.01*	*1,264.10*	*43.08*	*47.14*	*0.63*	*0.26*
ELECTRICITY	175	117,275,207	3.17%	16.86	1,136.75	32.56	52.59	0.55	0.28
ENVIRONMENTAL SERVICES	125	9,402,746	0.21%	16.47	555.54	10.45	46.11	0.77	0.29
GAS	89	9,668,175	3.63%	14.32	3,815.55	163.87	47.49	0.61	0.25
MULTIUTILITIES	43	22,513,043	1.02%	16.30	333.98	9.27	40.45	0.56	0.16
WATER SERVICES	117	27,768,459	1.52%	20.03	612.60	14.14	42.46	0.62	0.22
TOTAL AVERAGE	**2,166**	**638,534,913**	**-4.23%**	**13.16**	**739.57**	**69.65**	**49.82**	**0.71**	**0.41**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk

Table A5. Average Roa by Sector by Country

COUNTRY	Number of GOEs	Total Assets th EUR	AGRICULTURE	COMMUNICATIONS	CONSTRUCTION	FINANCE	MANUFACTURING	OIL and MINING	SERVICES	POSTAL SERVICES	TRADE	TRANSPORTS	UTILITIES	TOTAL
West Countries														
AUSTRIA	77	51,711,994	4.04%	3.12%	1.78%	2.30%	-2.63%	8.10%	6.39%	0.31%	11.39%	-0.08%	4.10%	1.80%
BELGIUM	48	38,689,917		-0.02%	0.20%	-4.46%	15.44%	2.95%	-4.88%	-2.08%	25.60%	9.46%	0.16%	7.78%
CYPRUS	1	323,256											-10.99%	-10.99%
DENMARK	21	6,922,098	2.91%	13.83%	5.07%	39.28%	-5.71%				20.60%	5.37%	8.60%	9.97%
FINLAND	58	66,539,487		8.00%	12.47%	0.93%	1.50%	17.42%		3.42%	-9.36%	12.09%	2.48%	3.41%
FRANCE	706	776,692,739	1.96%	-2.67%	-0.88%	7.55%	0.01%	3.76%	0.52%	-8.33%	1.53%	1.38%	1.48%	-0.14%
GERMANY	1,125	1,036,181,315	4.15%	3.91%	1.91%	-0.27%	-0.63%	3.10%	1.42%	-11.73%	-8.47%	-6.30%	3.38%	-3.25%
GREECE	97	36,555,146	-10.92%	18.83%	2.32%	15.09%	0.26%	9.39%		1.77%	9.70%	-10.28%	7.53%	3.07%
IRELAND	19	3,566,580					0.63%			1.23%		2.02%		1.81%
ITALY	538	466,696,222	1.04%	-0.47%	-0.74%	-0.18%	1.84%	2.15%	0.49%	-4.09%	-5.79%	-1.11%	1.24%	-0.90%
LUXEMBOURG	3	1,144,867				23.79%							9.06%	13.97%
NETHERLANDS	88	175,583,408		15.98%	-11.04%	-0.58%	6.22%	31.04%		5.33%	5.98%	3.33%	1.80%	4.08%
PORTUGAL	40	1,387,230			-0.35%	22.07%	2.47%			-3.90%	-1.53%	1.60%	1.32%	0.96%
SPAIN	302	25,650,323	0.36%	-99.52%	1.61%	3.62%	-1.81%	4.17%	1.03%	-10.97%	-22.07%	-4.21%	1.72%	-5.60%
SWEDEN	118	95,930,615	5.24%	8.75%		0.24%	4.32%	22.10%	9.50%	2.67%	3.81%	3.31%	4.23%	2.84%
UNITED KINGDOM	259	58,422,880		7.70%	9.47%	8.43%	-5.97%	9.51%	6.72%	-22.83%	5.73%	4.01%	2.64%	-5.55%
Total West	*3,500*	*2,841,998,077*	*-0.92%*	*-3.66%*	*0.88%*	*2.77%*	*0.41%*	*10.28%*	*3.24%*	*-9.01%*	*-1.23%*	*0.08%*	*2.46%*	*-1.40%*
East Countries														
BULGARIA	525	11,454,550	-6.41%	10.45%	-0.50%	2.32%	-1.16%	-5.82%	7.95%	-4.75%	0.20%	0.15%	0.93%	-1.62%
CZECH REPUBLIC	26	6,272,616	1.49%			-161.99%	-9.13%		3.93%	2.10%		2.16%	9.90%	-24.64%
ESTONIA	39	3,810,394	0.73%	29.92%		4.93%	0.95%	6.22%	5.66%	3.30%	3.07%	9.48%	6.35%	7.58%
HUNGARY	10	1,832,768		2.78%	2.14%	-0.99%	-6.39%			0.47%	6.04%			-0.30%
LATVIA	9	1,142,446		37.37%		-6.61%	6.94%			25.43%	14.18%	-2.60%		11.16%
LITHUANIA	14	4,477,329		5.19%	2.81%		-6.81%	18.96%			-1.37%	2.12%	2.36%	3.10%
POLAND	1,109	80,004,161	-1.70%	5.81%	-5.46%	28.34%	-1.23%	1.90%	5.41%	0.88%	-4.13%	-1.26%	0.89%	0.59%
ROMANIA	415	16,410,256		8.89%	-12.19%	3.49%	-13.26%	-8.54%		-24.15%	1.05%	-12.70%	-0.31%	-10.44%
SLOVAKIA	2	685,190				10.97%							20.09%	15.53%
Total East	*2,149*	*126,089,710*	*-2.27%*	*9.75%*	*-5.20%*	*9.42%*	*-3.10%*	*-1.14%*	*5.74%*	*-4.29%*	*-0.81%*	*-2.80%*	*1.42%*	*-1.87%*
TOTAL	5,649	2,968,087,787	-2.06%	2.30%	-1.93%	3.79%	-2.14%	3.03%	3.91%	-7.53%	-1.02%	-0.76%	2.25%	-1.58%

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

183

Table A6. Average Debt Ratio by Sector by Country

COUNTRY	Number of GOEs	Total Assets th EUR	AGRICULTURE	COMMUNICATIONS	CONSTRUCTION	FINANCE	MANUFACTURING	OIL and MINING	SERVICES	POSTAL SERVICES	TRADE	TRANSPORTS	UTILITIES	TOTAL
West Countries														
AUSTRIA	77	51,711,994	0.53	0.73	0.63	0.51	0.58	0.49	0.51	0.51	0.83	0.57	0.64	0.57
BELGIUM	48	38,689,917		0.55	0.44	0.71	5.01	0.25	0.76	0.49	1.46	0.64	0.58	1.53
CYPRUS	1	323,256										0.71		0.71
DENMARK	21	6,922,098	0.16	0.40	0.39	0.14	0.44				0.42	0.59	0.42	0.43
FINLAND	58	66,539,487		0.39	0.41	0.52	0.64	0.58		0.65	0.68	0.63	0.54	0.60
FRANCE	706	776,692,739	0.90	0.77	0.72	0.74	0.84	0.53	0.96	1.39	0.61	0.96	0.71	0.98
GERMANY	1,125	1,036,181,315	0.18	0.55	0.69	0.68	0.64	0.75	0.97	0.57	0.73	0.63	0.55	0.61
GREECE	97	36,555,146	1.14	0.71	0.74	0.40	0.76	0.39		0.65	0.57	0.90	0.60	0.67
IRELAND	19	3,566,580					0.31			0.71		0.85		0.79
ITALY	538	466,696,222	0.45	0.73	0.80	0.69	0.72	0.44	0.97	0.77	0.79	0.72	0.71	0.73
LUXEMBOURG	3	1,144,867				0.44							0.30	0.35
NETHERLANDS	88	175,583,408		0.49	2.02	0.89	0.62	0.74		1.00	0.50	0.72	0.83	0.87
PORTUGAL	40	1,387,230			0.94	0.78	0.83			0.87	0.79	0.87	0.82	0.84
SPAIN	302	25,650,323	0.56	1.62	0.58	0.50	0.62	0.73	0.53	0.73	0.76	0.66	0.71	0.66
SWEDEN	118	95,930,615	0.55	0.43		0.62	0.60	0.28	0.67	0.54	0.77	0.63	0.61	0.58
UNITED KINGDOM	259	58,422,880		0.99	0.71	0.52	0.86	0.55	0.97	1.50	0.83	0.86	0.81	1.05
Total West	*3,500*	*2,841,998,077*	*0.62*	*0.79*	*0.77*	*0.66*	*0.89*	*0.57*	*0.85*	*0.85*	*0.74*	*0.79*	*0.64*	*0.76*
East Countries														
BULGARIA	525	11,454,550	1.17	0.42	0.87	0.46	0.67	0.78	0.62	0.55	0.55	0.56	0.44	0.63
CZECH REPUBLIC	26	6,272,616	0.06			0.42	1.02		0.46	0.36		0.59	0.43	0.51
ESTONIA	39	3,810,394	0.28	0.16		0.78	0.18	0.29	0.53	0.41	0.54	0.45	0.39	0.42
HUNGARY	10	1,832,768		0.34	0.89	0.05	0.47			0.83	0.71			0.58
LATVIA	9	1,142,446		0.13		0.10	0.88			0.16	0.71	0.80		0.56
LITHUANIA	14	4,477,329		0.15	0.61		0.50	0.58			0.35	0.17	0.26	0.32
POLAND	1,109	80,004,161	0.19	0.33	0.66	0.41	0.56	0.58	0.00	0.30	0.43	0.39	0.32	0.42
ROMANIA	415	16,410,256		0.49	0.88	0.59	1.24	0.86		1.46	0.62	1.32	0.68	1.07
SLOVAKIA	2	685,190					0.43						0.18	0.31
Total East	*2,149*	*126,089,710*	*0.35*	*0.34*	*0.78*	*0.47*	*0.72*	*0.67*	*0.41*	*0.62*	*0.54*	*0.62*	*0.39*	*0.61*
TOTAL	**5,649**	**2,968,087,787**	**0.41**	**0.61**	**0.78**	**0.64**	**0.77**	**0.63**	**0.76**	**0.80**	**0.64**	**0.75**	**0.59**	**0.71**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A7. Average EBITDA by Sector by Country

COUNTRY	Number of GOEs	Total Assets th EUR	AGRICULTURE	COMMUNICATIONS	CONSTRUCTION	FINANCE	MANUFACTURING	OIL and MINING	SERVICES	POSTAL SERVICES	TRADE	TRANSPORTS	UTILITIES	TOTAL
West Countries														
AUSTRIA	77	51,711,994	12.28	41.05	17.81	35.99	12.28	15.38	12.83	5.32	2.48	19.33	23.24	15.95
BELGIUM	48	38,689,917		33.23	12.60	1.47	11.77	41.28	7.68	-2.06	7.80	10.85	13.83	10.33
CYPRUS	1	323,256										-11.04		-11.04
DENMARK	21	6,922,098	9.44	27.96	5.38		9.86				29.56	6.07	56.47	18.41
FINLAND	58	66,539,487		30.74	8.30	20.09	10.37	9.31		9.52	4.95	8.49	25.37	14.22
FRANCE	706	776,692,739	11.35	16.72	11.04	18.79	3.00	-17.19	6.97	7.95	2.57	6.12	19.14	8.73
GERMANY	1,125	1,036,181,315	3.74	36.82	29.24	30.38	8.37	21.96	8.90	5.28	7.80		18.06	15.46
GREECE	97	36,555,146	4.91	13.32	10.07	27.84	0.01	10.08		8.56	15.48	-15.30	14.11	8.26
IRELAND	19	3,566,580										7.81		7.81
ITALY	538	466,696,222	5.73	15.32	6.97	17.02	9.60	3.90	14.70	7.32	2.89	11.72	14.07	10.86
LUXEMBOURG	3	1,144,867				35.19						21.60		26.13
NETHERLANDS	88	175,583,408		40.20	3.52	64.72	9.27	39.21		14.91	14.98	14.24	30.30	22.00
PORTUGAL	40	1,387,230			28.44	31.96	11.36			10.00	20.99	10.09	39.48	19.97
SPAIN	302	25,650,323	8.69	-4.15	7.63	12.86	-1.64	15.42	7.22	3.92	-2.78	1.48	13.38	6.23
SWEDEN	118	95,930,615	11.87	24.07		26.80	7.57	48.42	8.91	2.61	5.81	8.66	34.37	12.00
UNITED KINGDOM	259	58,422,880		-0.49	2.59	38.43	3.72	32.13	4.24	7.86	6.29	9.11	31.38	10.35
Total West	*3,500*	*2,841,998,077*	*7.64*	*17.94*	*14.75*	*25.01*	*6.12*	*17.54*	*8.13*	*6.16*	*5.36*	*7.01*	*18.15*	*11.96*
East Countries														
BULGARIA	525	11,454,550	1.19	26.70	4.98	6.53	9.65	8.92	10.67	7.99	10.08	7.98	16.93	8.92
CZECH REPUBLIC	26	6,272,616	7.26			6.89	2.07		9.55	31.04		9.56	22.95	16.04
ESTONIA	39	3,810,394	27.77	53.45		73.11	5.33	10.47	10.16	10.47	3.14	34.57	34.85	23.78
HUNGARY	10	1,832,768		35.24	1.26	32.37	-20.51			62.65	2.59			17.59
LATVIA	9	1,142,446										-0.52		-0.52
LITHUANIA	14	4,477,329												
POLAND	1,109	80,004,161	11.51	15.67	-0.56	17.02	3.54	6.39		6.83	2.42	8.14	13.78	7.18
ROMANIA	415	16,410,256		21.26	-4.22	22.40	-0.76	-8.36		1.76	12.08	3.44	0.21	4.13
SLOVAKIA	2	685,190					27.92						17.69	22.81
Total East	*2,149*	*126,089,710*	*10.21*	*23.59*	*0.55*	*15.89*	*5.31*	*3.58*	*10.13*	*7.04*	*7.64*	*8.07*	*13.79*	*7.72*
TOTAL	**5,649**	**2,968,087,787**	**9.75**	**20.14**	**9.14**	**23.84**	**5.60**	**10.78**	**8.48**	**6.40**	**6.45**	**7.25**	**17.60**	**10.64**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A8. Average Net Income by Sector by Country

COUNTRY	Number of GOEs	Total Assets th EUR	AGRICULTURE	COMMUNICATIONS	CONSTRUCTION	FINANCE	MANUFACTURING	OIL and MINING	SERVICES	POSTAL SERVICES	TRADE	TRANSPORTS	UTILITIES	TOTAL
West Countries														
AUSTRIA	77	51,711,994	13.30	17.63	32.31	112.62	-25.99	28.86	3.97	-7.29	466.63	5.16	435.92	101.22
BELGIUM	48	38,689,917		-113.57	0.30	136.08	14.22	70.02	-3.00	-13.75	2,632.29	20.43	9.64	292.97
CYPRUS	1	323,256										-15.03		-15.03
DENMARK	21	6,922,098	1.38	32.34	3.97	315.22	8.98				101.20	5.09	101.38	63.91
FINLAND	58	66,539,487		35.32	10.87	105.50	72.85	147.31		1.26	25.77	9.49	27.71	39.27
FRANCE	706	776,692,739	4.01	35.48	-7.53	678.67	19.59	-18.92	1.88	9.61	3.46	13.48	48.84	129.72
GERMANY	1,125	1,036,181,315	5.58	18.88	-3.18	174.51	202.08	334.17	6.30	244.24	80.68	-15.18	359.30	223.09
GREECE	97	36,555,146	-4.89	104.24	24.90	212.04	1.16	68.34		4.92	239.40	6.06	15.21	46.07
IRELAND	19	3,566,580					5.27			-15.43		5.84		2.76
ITALY	538	466,696,222	1.30	-10.46	5.56	2.85	11.42	45.73	1.59	-16.18	14.07	8.45	41.66	16.55
LUXEMBOURG	3	1,144,867				19,377.38							61.43	6,500.08
NETHERLANDS	88	175,583,408		85.84	1,383.60	2,466.96	39.22	16,549.79		212.83	145.34	24.72	5.42	1,493.61
PORTUGAL	40	1,387,230			-7.83	87.27	22.26			6.19	-42.28	6.05	6.82	10.64
SPAIN	302	25,650,323	1.35	-137.43	32.16	76.25	6.27	3.66	0.91	-12.42	-9.22	7.94	20.17	16.51
SWEDEN	118	95,930,615	36.05	39.26		593.26	14.49	135.93	4.70	68.41	33.25	5.40	53.65	180.47
UNITED KINGDOM	259	58,422,880		113.94	35.61	781.84	10.30	1,430.33	4.84	-218.14	120.89	22.18	76.91	35.05
Total West	*3,500*	*2,841,998,077*	*5.85*	*28.48*	*100.82*	*406.48*	*33.39*	*2,752.37*	*2.89*	*61.33*	*132.16*	*9.15*	*180.79*	*160.01*
East Countries														
BULGARIA	525	11,454,550	-0.55	24.84	-3.48	5.10	-0.13	8.48	0.26	-0.31	2.42	-4.96	20.33	0.71
CZECH REPUBLIC	26	6,272,616	1.07			2.84	-6.18		0.60	-6.22		13.41	92.82	24.73
ESTONIA	39	3,810,394	1.25	47.75		112.29	-0.03	1.22	0.63	4.10	14.37	12.62	52.04	22.62
HUNGARY	10	1,832,768		5.19	1.63	-29.61	-0.96			10.95	17.09			2.16
LATVIA	9	1,142,446		156.45		-980.61	0.26			5.79	4.57	-1.55		-89.72
LITHUANIA	14	4,477,329		14.13	0.48		-1.88	257.99			-2.45	9.78	42.18	41.94
ROMANIA	415	16,410,256		38.62	1.75	9.73	-2.41	-0.94		-12.31	23.50	-0.97	2.79	2.34
SLOVAKIA	2	685,190					43.18						52.23	47.70
Total East	*2,149*	*126,089,710*	*0.93*	*21.54*	*10.99*	*214.38*	*1.72*	*11.42*	*0.51*	*4.15*	*9.75*	*44.92*	*10.75*	*20.73*
TOTAL	**5,649**	**2,968,087,787**	**1.71**	**25.40**	**59.33**	**377.21**	**10.38**	**1,013.49**	**2.25**	**43.35**	**68.47**	**19.66**	**145.46**	**106.75**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A9. Average Operat_rev_per_employee by Sector by Country

COUNTRY	Number of GOEs	Total Assets th EUR	AGRICULTURE	COMMUNICATIONS	CONSTRUCTION	FINANCE	MANUFACTURING	OIL and MINING	SERVICES	POSTAL SERVICES	TRADE	TRANSPORTS	UTILITIES	TOTAL
West Countries														
AUSTRIA	77	51,711,994	151.47	243.67	512.24	2,827.81	287.77	499.31	69.65	1,778.15	15,899.88	125.99	6,499.63	2,478.71
BELGIUM	48	38,689,917		446.92	165.10	233.33	373.97	562.02	58.98	165.40	7,368.57	432.05	1,065.00	1,119.26
CYPRUS	1	323,256				140.25	299.77				1,047.90	135.21		135.21
DENMARK	21	6,922,098	95.31	262.30	136.76						1,154.84	259.17	481.89	413.54
FINLAND	58	66,539,487		290.88	174.98	507.10	275.42	2,240.28		87.40		392.40	1,037.75	538.06
FRANCE	706	776,692,739	82.88	682.38	350.79	891.01	192.04	411.71	64.54	391.71	667.76	390.88	3,256.40	586.68
GERMANY	1,125	1,036,181,315	97.93	242.97	410.54	1,387.43	544.52	2,352.44	131.45	477.11	8,664.34	292.14	1,454.24	1,086.47
GREECE	97	36,555,146	100.86	945.17	229.34	474.41	114.71	759.25		169.23	900.46	166.86	1,734.88	366.83
IRELAND	19	3,566,580					465.36			105.21		157.60		172.10
ITALY	538	466,696,222	103.00	910.81	310.20	711.13	328.27	563.53	62.83	463.10	3,588.64	333.51	1,606.07	1,108.49
LUXEMBOURG	3	1,144,867				41,574.38							787.01	14,382.80
NETHERLANDS	88	175,583,408		359.30	4,199.29	6,248.18	592.71	66,867.82		1,109.89	1,504.54	459.82	571.01	5,647.59
PORTUGAL	40	1,387,230			104.26	788.31	202.53			462.30	544.58	75.14	108.06	299.50
SPAIN	302	25,650,323	68.20	131.65	595.63	890.58	194.98	73.01	34.28	230.39	1,646.50	352.13	338.72	488.28
SWEDEN	118	95,930,615	375.14	359.30		1,142.14	319.75	436.01	81.29	385.87	1,033.84	456.39	485.27	592.90
UNITED KINGDOM	259	58,422,880		663.20	658.82	1,643.64	439.30	4,984.28	172.19	1,873.92	9,346.11	702.38	772.28	1,831.25
Total West	*3,500*	*2,841,998,077*	*130.30*	*564.62*	*640.75*	*1,365.83*	*324.03*	*11,113.03*	*106.95*	*578.64*	*3,948.81*	*373.27*	*1,528.08*	*1,087.57*
East Countries														
BULGARIA	525	11,454,550	12.06	109.42	43.04	34.72	141.22	67.80	4.97	12.83	177.29	25.19	190.39	94.86
CZECH REPUBLIC	26	6,272,616	26.83			391.29	77.71		15.61	118.24		571.15	1,028.77	458.41
ESTONIA	39	3,810,394	61.88	163.80		182.75	22.31	29.39	12.06	76.92	221.71	87.06	260.65	134.34
HUNGARY	10	1,832,768		35.82	172.74	571.85	73.50			514.76	7,972.59		127.41	1,797.56
LATVIA	9	1,142,446		472.94		3,820.79	14.52			38.39	157.08	127.41		563.63
LITHUANIA	14	4,477,329		126.39	28.44		16.63	3,249.40			194.95	82.49	471.60	489.23
POLAND	1,109	80,004,161	34.34	52.05	92.78	631.58	174.61	162.56	16.85	323.88	344.51	206.65	130.65	221.48
ROMANIA	415	16,410,256		68.23	16.89	36.58	22.70	17.70		13.48	402.30	66.04	64.75	95.42
SLOVAKIA	2	685,190					416.76						423.11	419.94
Total East	*2,149*	*126,089,710*	*31.53*	*83.16*	*63.22*	*411.17*	*139.27*	*163.99*	*12.37*	*185.03*	*390.56*	*161.73*	*182.38*	*182.80*
TOTAL	**5,649**	**2,968,087,787**	**47.99**	**350.64**	**382.83**	**1,228.84**	**191.33**	**4,240.76**	**88.03**	**462.81**	**2,076.56**	**313.30**	**1,264.22**	**755.07**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A10. Average Cost of employee by Sector by Country

COUNTRY	Number of GOEs	Total Assets th EUR	AGRICULT URE	COMMUNI CATIONS	CONSTRUC TION	FINANCE	MANUFAC TURING	OIL and MINING	SERVICES	POSTAL SERVICES	TRADE	TRANSPOR TS	UTILITIES	TOTAL
West Countries														
AUSTRIA	77	51,711,994	52.88	40.45	101.07	105.96	70.04	60.05	42.24	49.39	62.58	46.10	63.82	57.72
BELGIUM	48	38,689,917		72.85	48.30	78.83	60.24	107.18	41.10	59.17	88.12	51.44	42.76	62.41
CYPRUS	1	323,256										0.06		0.06
DENMARK	21	6,922,098	48.81	52.53	66.99	46.84	46.94				72.61	47.89	51.17	53.80
FINLAND	58	66,539,487		44.20	35.45	57.94	48.11	49.25		31.55	38.51	42.03	37.78	41.15
FRANCE	706	776,692,739	51.22	83.12	38.63	76.71	48.31	72.33	38.40	68.95	65.27	47.72	415.91	72.02
GERMANY	1,125	1,036,181,315	38.45	39.54	68.09	73.78	74.77	88.56	41.71	50.14	67.42	61.75	54.78	59.81
GREECE	97	36,555,146												
IRELAND	19	3,566,580										71.76		71.76
ITALY	538	466,696,222	46.50	57.84	47.56	48.59	40.40	41.49	33.40	64.92	41.65	46.41	42.07	47.32
LUXEMBOURG	3	1,144,867											66.05	66.05
NETHERLANDS	88	175,583,408		41.19	43.28	31.59	63.73	61.43		80.35	54.67	65.49	62.43	61.58
PORTUGAL	40	1,387,230			40.14	23.53	28.43			41.76	39.52	19.27	22.38	30.12
SPAIN	302	25,650,323	30.64	69.03	45.76	47.14	36.11	20.88	19.56	49.21	42.33	37.25	40.85	44.69
SWEDEN	118	95,930,615	30.36	42.03		45.81	36.00	42.33	25.86	47.48	32.72	34.16	37.36	43.02
UNITED KINGDOM	259	58,422,880		88.55	47.70	82.81	55.27	88.11	38.94	62.17	71.57	46.44	55.33	59.68
Total West	*3,500*	*2,841,998,077*	*38.95*	*67.48*	*53.34*	*68.38*	*51.50*	*71.51*	*36.70*	*56.06*	*55.60*	*48.62*	*63.57*	*57.54*
East Countries														
BULGARIA	525	11,454,550	2.98	8.44	2.89	5.41	3.49	4.29	2.82	3.76	5.14	5.58	5.97	4.03
CZECH REPUBLIC	26	6,272,616	6.65			31.68	10.91		9.36	18.01		13.59	18.81	17.85
ESTONIA	39	3,810,394	6.63	11.91		16.58	8.91	5.15	6.68	15.05	12.71	14.70	11.26	12.41
HUNGARY	10	1,832,768		8.47	21.19	26.45	7.39			47.50	27.48			24.54
LATVIA	9	1,142,446										24.22		24.22
LITHUANIA	14	4,477,329												
POLAND	1,109	80,004,161	6.75	14.95	9.83	19.90	38.19	9.60		21.23	14.24	11.82	10.30	20.66
ROMANIA	415	16,410,256		7.82	4.93	3.54	3.97	6.65		4.64	5.80	6.10	5.43	5.01
SLOVAKIA	2	685,190					11.90						13.10	12.50
Total East	*2,149*	*126,089,710*	*6.16*	*11.99*	*6.13*	*13.15*	*16.78*	*7.11*	*6.28*	*12.87*	*8.85*	*9.72*	*9.13*	*12.22*
TOTAL	**5,649**	**2,968,087,787**	**10.90**	**45.58**	**33.36**	**60.73**	**28.09**	**35.84**	**31.90**	**43.84**	**31.78**	**39.26**	**55.99**	**42.60**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A11. Average Cost of employee/Operat.Rev. by Sector by Country

COUNTRY	Number of GOEs	Total Assets th EUR	AGRICULTURE	COMMUNICATIONS	CONSTRUCTION	FINANCE	MANUFACTURING	OIL and MINING	SERVICES	POSTAL SERVICES	TRADE	TRANSPORTS	UTILITIES	TOTAL
West Countries														
AUSTRIA	77	51,711,994	0.35	0.17	0.18	0.89	0.27	0.10	0.61	0.91	0.01	0.82	0.32	0.65
BELGIUM	48	38,689,917		0.17	0.29	0.69	0.23	0.19	0.70	0.53	0.46	0.29	0.10	0.36
CYPRUS	1	323,256										0.00		0.00
DENMARK	21	6,922,098	0.51	0.20	0.49	0.27	0.16				0.18	0.21	0.13	0.22
FINLAND	58	66,539,487		0.15	0.22	0.70	0.23	0.02		0.35	0.07	0.26	0.13	0.25
FRANCE	706	776,692,739	0.62	0.32	0.38	0.46	0.33	0.31	0.60	0.67	0.25	0.31	0.15	0.42
GERMANY	1,125	1,036,181,315	0.44	0.14	0.20	0.23	0.26	0.21	0.45	0.53	0.11	0.40	0.15	0.32
GREECE	97	36,555,146												
IRELAND	19	3,566,580										0.28		0.28
ITALY	538	466,696,222	0.45	0.24	0.22	2.79	0.17	0.40	0.53	0.32	0.25	0.38	0.20	0.35
LUXEMBOURG	3	1,144,867										0.08		0.08
NETHERLANDS	88	175,583,408		0.15	0.27	0.50	0.18	0.07		0.40	0.13	0.32	0.15	0.23
PORTUGAL	40	1,387,230			0.39	0.28	0.18			0.35	0.13	0.36	0.25	0.28
SPAIN	302	25,650,323	0.51	0.95	0.36	0.47	0.31	0.29	0.58	1.30	0.50	0.36	0.31	0.71
SWEDEN	118	95,930,615	0.13	0.12		0.21	0.16	0.10	0.32	0.35	0.08	0.40	0.08	0.27
UNITED KINGDOM	259	58,422,880		0.20	0.26	0.44	1.88	0.11	0.33	1.22	0.20	0.39	2.32	0.98
Total West	*3,500*	*2,841,998,077*	*0.42*	*0.28*	*0.27*	*0.42*	*0.48*	*0.19*	*0.47*	*0.68*	*0.24*	*0.36*	*0.24*	*0.43*
East Countries														
BULGARIA	525	11,454,550	0.30	0.18	0.31	0.42	0.32	0.32	0.57	0.41	0.20	0.46	0.15	0.34
CZECH REPUBLIC	26	6,272,616	0.25			5.74	0.21		0.60	0.34		0.20	0.07	1.13
ESTONIA	39	3,810,394	0.11	0.08		0.95	0.41	0.16	0.55	0.31	0.13	0.25	0.08	0.25
HUNGARY	10	1,832,768		0.24	0.12	0.05	0.15			0.18	0.01			0.12
LATVIA	9	1,142,446										0.10		0.10
LITHUANIA	14	4,477,329												
POLAND	1,109	80,004,161	0.23	0.35	0.24	0.25	0.24	0.23		0.42	0.18	0.30	0.16	0.28
ROMANIA	415	16,410,256		0.30	0.52	0.26	0.38	0.43		0.52	0.26	0.50	0.81	0.43
SLOVAKIA	2	685,190					0.03						0.03	0.03
Total East	*2,149*	*126,089,710*	*0.24*	*0.29*	*0.34*	*0.59*	*0.30*	*0.32*	*0.57*	*0.43*	*0.21*	*0.37*	*0.30*	*0.34*
TOTAL	**5,649**	**2,968,087,787**	**0.26**	**0.28**	**0.30**	**0.44**	**0.36**	**0.26**	**0.49**	**0.61**	**0.22**	**0.37**	**0.25**	**0.40**

Note: The data refer to 2005. Source: *AMADEUS Database* (Bureau van Dijk).

Table A12. GOEs by Level of Government, Western v. Eastern Countries

LEVEL OF GOVERNMENT	Number of GOEs *of which*		West *of which*		East *of which*		Total assets th EUR *of which*		Operating Revenues th EUR *of which*		Number of Employees *of which*	
	West	East	Listed	Unlisted	Listed	Unlisted	West	East	West	East	West	East
STATE	1,459	1,972	72	1,387	95	1,877	2,205,359,948	123,013,255	1,215,301,593	99,242,269	4,738,601	1,148,655
REGION	327	5	9	318		5	374,145,896	194,875	203,614,200	54,167	589,625	109
PROVINCE	96	3	5	91		3	16,228,733	42,895	8,681,581	17,500	61,542	441
MUNICIPALITY	1,599	168	25	1,574	1	167	244,086,760	2,810,512	125,551,131	1,327,955	543,448	32,034
MIXED LOCAL	19	1		19		1	2,176,740	28,173	671,971	7	3,595	20
TOTAL	3,500	2,149	111	3,389	96	2,053	2,841,998,077	126,089,710	1,553,820,476	100,641,898	5,936,811	1,181,259

LEVEL OF GOVERNMENT	Number of GOEs *of which*		West *of which*		East *of which*		Average assets th EUR *of which*		Average Operating Revenues th EUR *of which*		Average Number of Employees *of which*	
	West	East	Listed	Unlisted	Listed	Unlisted	West	East	West	East	West	East
STATE	1,459	1,972	72	1,387	95	1,877	1,511,556	62,380	832,969	50,326	3,248	582
REGION	327	5	9	318		5	1,144,177	38,975	622,673	10,833	1,803	22
PROVINCE	96	3	5	91		3	169,049	14,298	90,433	5,833	641	147
MUNICIPALITY	1,599	168	25	1,574	1	167	152,650	16,729	78,519	7,904	340	191
MIXED LOCAL	19	1		19		1	114,565	28,173	35,367	7	189	20
TOTAL	3,500	2,149	111	3,389	96	2,053	811,999	58,674	443,949	46,832	1,696	550

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Table A13. GOEs by Sector by Western v. Eastern Countries

SECTOR	Number of GOEs		Total assets th EUR		Operating Revenues th EUR		Number of Employees	
	of which		*of which*		*of which*		*of which*	
	West	**East**	**West**	**East**	**West**	**East**	**West**	**East**
AGRICULTURE	16	80	4,871,458	1,579,124	1,179,794	1,526,364	4,378	37,000
COMMUNICATIONS	50	40	309,317,462	4,152,199	155,240,357	2,669,216	582,140	35,249
CONSTRUCTIONS	114	92	11,633,726	2,118,981	6,798,085	742,506	48,914	15,343
FINANCE	579	97	161,637,563	6,551,549	56,599,231	1,651,752	245,958	9,708
MANUFACTURING	253	645	594,566,594	16,444,368	425,372,503	17,206,137	1,300,553	261,235
OIL and MINING	35	59	346,612,096	16,006,490	319,033,538	21,535,701	330,132	126,900
POSTAL SERVICES	16	4	346,089,310	1,636,036	99,116,223	2,313,719	1,215,921	150,597
TRADE	172	191	39,960,018	4,334,333	37,274,409	9,121,749	90,479	31,414
TRANSPORTATIONS - of which	*685*	*271*	*326,431,544*	*21,712,799*	*131,237,098*	*9,296,392*	*1,025,179*	*170,786*
AIRPORTS	57	12	29,270,052	679,629	10,557,520	185,664	79,499	4,348
HIGHWAYS	19	29	8,211,912	135,043	2,176,278	191,576	7,867	6,027
LOCAL TRANSPORTS	226	112	20,371,869	4,619,434	11,608,068	1,356,240	139,682	51,377
RAILWAYS	38	10	240,440,374	8,847,520	79,792,795	3,733,057	655,010	71,300
TRANSP. BY AIR	8	7	13,120,098	1,696,976	10,702,528	1,951,274	58,658	12,177
TRANSP. SERVICES	163	26	4,408,784	385,747	7,522,943	492,852	38,282	5,445
TRUCKING AND WAREH.	126	44	4,382,301	132,817	6,633,343	239,343	31,749	6,214
WATER TRANSP.	48	31	6,226,154	5,215,633	2,243,623	1,146,386	14,432	13,898
SERVICES - of which	*952*	*397*	*101,065,700*	*11,519,988*	*53,502,230*	*10,609,642*	*352,502*	*141,470*
BUSINESS SERVICES	313	49	23,002,756	4,465,788	16,210,998	3,758,164	93,402	6,079
ENGINEERING & MGMT S.	283	172	58,617,964	3,949,096	22,746,879	4,035,939	116,016	27,706
HEALTH SERVICES	64	90	7,695,001	466,578	6,462,587	494,353	88,998	35,852
OTHER SERVICES	292	86	11,749,979	2,638,526	8,081,766	2,321,186	54,086	71,833
UTILITIES - of which	*615*	*150*	*598,579,711*	*39,521,345*	*268,295,565*	*23,612,090*	*739,207*	*185,523*
ELECTRICITY	226	72	492,981,224	26,952,847	208,687,993	17,010,933	543,255	114,470
ENVIRONMENTAL S.	129	14	10,026,250	128,470	4,732,742	290,802	37,982	1,884
GAS	102	7	45,783,876	9,374,318	29,907,865	4,827,733	70,258	45,805
MULTIUTILITIES	44	34	22,079,238	1,928,384	13,326,265	1,172,775	45,461	13,902
WATER SERVICES	114	23	27,709,123	1,137,326	11,640,700	309,847	42,251	9,462
TOTAL	**3,487**	**2,026**	**2,840,765,182**	**125,577,212**	**1,553,649,033**	**100,285,268**	**5,935,363**	**1,165,225**

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Austria: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Austria public companies (A)					
# Observations	12	12	11	10	11
Mean	0.640	435.917	63.817	23.238	0.318
Median	0.677	11.508	57.177	21.830	0.226
Other Western Countries public companies (B)					
# Observations	603	560	570	585	570
Mean	0.638	175.325	63.570	18.066	0.237
Median	0.627	10.116	46.265	16.000	0.145
Difference between means ((B) - (A))	-0.002	-260.592	-0.247	-5.172	-0.081
T-stat	-0.031	-0.305	-0.002	-0.939	-0.233
Difference between medians ((B) - (A))	-0.050	-1.392	-10.912	-5.830	-0.081
Wilcoxon Z-stat	-0.097	-1.038	-2.439	-1.823 *	-1.813 *

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Stata Panel

Panel Austria: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Austria public companies (A)					
# Observations	19	18	19	18	19
Mean	0.574	5.163	46.098	19.331	0.815
Median	0.518	3.628	46.491	19.815	0.326
Other Western Countries public companies (B)					
# Observations	663	620	633	625	633
Mean	0.799	9.303	48.770	6.687	0.351
Median	0.722	2.009	37.810	6.310	0.311
Difference between means ((B) - (A))	0.225	4.140	2.672	-12.644	-0.464
T-stat	0.615	0.118	0.884	-2.713 ***	-4.852 ***
Difference between medians ((B) - (A))	0.204	-1.619	-8.681	-13.505	-0.015
Wilcoxon Z-stat	2.063 **	-0.235	-1.535	-2.223 **	-1.217

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Austria: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Austria public companies (A)					
# Observations	4	4	4	4	4
Mean	0.579	-25.989	70.042	12.277	0.270
Median	0.621	-4.517	72.763	14.775	0.281
Other Western Countries public companies (B)					
# Observations	249	235	220	230	220
Mean	0.893	34.400	51.166	6.014	0.479
Median	0.678	4.388	45.915	7.205	0.212
Difference between means ((B) - (A))	0.314	60.389	-18.876	-6.263	0.209
T-stat	0.250	0.423	-0.825	-0.661	0.122
Difference between medians ((B) - (A))	0.057	8.905	-26.848	-7.570	-0.069
Wilcoxon Z-stat	0.634	1.357	-1.580	-0.805	-0.919

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Austria: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Austria public companies (A)					
# Observations	2	2	2	2	2
Mean	0.727	17.630	40.447	41.045	0.169
Median	0.727	17.630	40.447	41.045	0.168
Other Western Countries public companies (B)					
# Observations	48	48	44	45	44
Mean	0.796	28.933	68.712	16.912	0.283
Median	0.640	18.009	56.432	16.990	0.194
Difference between means ((B) - (A))	0.069	11.303	28.265	-24.133	0.114
T-stat	0.145	0.100	0.957	-1.597 *	0.407
Difference between medians ((B) - (A))	-0.087	0.379	15.985	-24.055	0.026
Wilcoxon Z-stat	-0.347	0.050	1.131	-1.897 *	0.269

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.
Source: *AMADEUS Database* (Bureau van Dijk).

Panel Bulgaria: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Mrgin (%)	Labour Cost/Operat_Revenues
Bulgaria public companies (A)					
# Observations	15	15	15	15	15
Mean	0.437	20.334	5.973	16.933	0.151
Median	0.444	0.511	5.413	17.010	0.111
Other Eastern Countries public companies (B)					
# Observations	123	135	79	72	79
Mean	0.381	9.687	9.735	13.131	0.322
Median	0.316	1.585	8.266	11.685	0.158
Difference between means ((B) - (A))	-0.056	-10.647	3.762	-3.802	0.171
T-stat	-0.634	-0.942	2.402 ***	-0.841	0.500
Difference between medians ((B) - (A))	-0.128	1.074	2.853	-5.325	0.047
Wilcoxon Z-stat	-1.317	1.005	3.041 ***	-1.023	0.914

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Bulgaria: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Mrgin (%)	Labour Cost/Operat_Revenues
Bulgaria public companies (A)					
# Observations	33	33	31	26	31
Mean	0.556	-4.958	5.575	7.979	0.463
Median	0.378	0.453	3.618	10.580	0.327
Other Eastern Countries public companies (B)					
# Observations	201	234	177	161	177
Mean	0.628	51.699	10.390	7.963	0.351
Median	0.414	0.096	6.205	6.680	0.291
Difference between means ((B) - (A))	0.072	56.657	4.815	-0.016	-0.112
T-stat	0.377	0.430	1.012	-0.044	-1.389 *
Difference between medians ((B) - (A))	0.036	-0.357	2.587	-3.900	-0.036
Wilcoxon Z-stat	0.129	-0.238	3.029 ***	-1.624	-1.367

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Bulgaria: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Mrgin (%)	Labour Cost/Operat_Revenues
Bulgaria public companies (A)					
# Observations	4	4	4	4	4
Mean	0.579	-25.989	70.041	12.277	0.270
Median	0.621	-4.517	72.763	14.775	0.281
Other Eastern Countries public companies (B)					
# Observations	249	235	220	230	220
Mean	0.893	34.400	51.166	6.014	0.479
Median	0.678	4.388	45.915	7.205	0.212
Difference between means ((B) - (A))	0.314	60.389	-18.875	-6.263	0.209
T-stat	0.250	0.424	-0.825	-0.661	0.122
Difference between medians ((B) - (A))	0.057	8.905	-26.848	-7.570	-0.069
Wilcoxon Z-stat	0.634	1.357	-1.580	-0.805	-0.919

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Bulgaria: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Mrgin (%)	Labour Cost/Operat_Revenues
Bulgaria public companies (A)					
# Observations	2	2	2	2	2
Mean	0.424	24.842	8.443	26.695	0.181
Median	0.424	24.842	8.443	26.695	0.181
Other Eastern Countries public companies (B)					
# Observations	32	38	28	28	28
Mean	0.330	21.363	12.247	23.365	0.294
Median	0.233	2.037	12.275	15.140	0.359
Difference between means ((B) - (A))	-0.094	-3.479	3.804	-3.330	0.113
T-stat	-0.442	-0.087	0.826	-0.226	1.050
Difference between medians ((B) - (A))	-0.191	-22.805	3.832	-11.555	0.178
Wilcoxon Z-stat	-0.073	-0.745	0.915	-0.915	1.081

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Finland: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Finland public companies (A)					
# Observations	13	12	11	13	11
Mean	0.544	27.706	37.776	25.366	0.131
Median	0.520	9.700	44.625	16.600	0.095
Other Western Countries public companies (B)					
# Observations	602	560	570	582	570
Mean	0.639	184.072	64.072	17.991	0.240
Median	0.628	10.219	46.410	16.065	0.146
Difference between means ((B) - (A))	0.095	156.366	26.296	-7.375	0.109
T-stat	1.423 *	0.183	0.247	-1.525 *	0.317
Difference between medians ((B) - (A))	0.108	0.519	1.785	-0.535	0.051
Wilcoxon Z-stat	0.986	0.209	1.152	-0.941	1.750 *

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Finland: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Finland public companies (A)					
# Observations	8	7	8	8	8
Mean	0.629	9.491	42.027	8.493	0.259
Median	0.743	6.500	33.945	7.925	0.256
Other Western Countries public companies (B)					
# Observations	674	631	644	635	644
Mean	0.795	9.183	48.775	7.022	0.366
Median	0.719	9.564	37.938	6.340	0.313
Difference between means ((B) - (A))	0.166	-0.308	6.748	-1.471	0.107
T-stat	0.297	-0.005	0.146	-0.211	0.720
Difference between medians ((B) - (A))	-0.024	3.064	3.993	-1.585	0.057
Wilcoxon Z-stat	-0.386	1.526	0.404	-0.236	0.975

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Finland: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Finland public companies (A)					
# Observations	13	12	10	10	10
Mean	0.635	72.852	48.107	10.368	0.227
Median	0.589	8.699	47.842	10.990	0.171
Other Western Countries public companies (B)					
# Observations	240	227	214	224	214
Mean	0.902	31.303	51.662	5.932	0.487
Median	0.685	3.869	45.507	6.950	0.217
Difference between means ((B) - (A))	0.267	-41.549	3.555	-4.436	0.260
T-stat	0.376	-0.497	0.242	-0.731	0.237
Difference between medians ((B) - (A))	0.096	-4.830	-2.335	-4.040	0.046
Wilcoxon Z-stat	1.090	-0.553	-0.679	-1.251	0.354

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel France: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
France public companies (A)					
# Observations	27	27	23	25	23
Mean	0.713	48.841	415.905	19.135	0.150
Median	0.731	19.452	52.583	16.490	0.124
Other Western Countries public companies (B)					
# Observations	588	545	558	570	558
Mean	0.634	187.328	49.052	18.110	0.242
Median	0.622	10.040	46.334	16.065	0.145
Difference between means ((B) - (A))	-0.079	138.487	-366.853	-1.025	0.092
T-stat	-1.679 **	0.240	-5.048 ***	-0.290	0.379
Difference between medians ((B) - (A))	-0.109	-9.412	-6.249	-0.425	0.021
Wilcoxon Z-stat	-1.900 *	-1.330	-0.321	-0.090	1.221

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel France: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
France public companies (A)					
# Observations	245	243	239	232	239
Mean	0.964	13.482	47.721	6.121	0.309
Median	0.745	2.981	32.600	5.785	0.279
Other Western Countries public companies (B)					
# Observations	437	395	413	411	413
Mean	0.697	6.544	49.255	7.559	0.397
Median	0.706	1.441	40.338	7.240	0.329
Difference between means ((B) - (A))	-0.267	-6.938	1.534	1.438	0.088
T-stat	-2.128 **	-0.582	0.145	0.894	2.595 ***
Difference between medians ((B) - (A))	-0.039	-1.540	7.738	1.455	0.050
Wilcoxon Z-stat	-3.262 ***	-1.264	6.875 ***	2.317 **	3.120 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel France: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
France public companies (A)					
# Observations	63	63	58	59	58
Mean	0.839	19.585	48.307	3.000	0.331
Median	0.664	5.023	44.746	6.260	0.283
Other Western Countries public companies (B)					
# Observations	190	176	166	175	166
Mean	0.905	38.330	52.619	7.173	0.526
Median	0.683	3.430	46.639	7.960	0.183
Difference between means ((B) - (A))	0.066	18.745	4.312	4.173	0.195
T-stat	0.183	0.453	0.623	1.482	0.377
Difference between medians ((B) - (A))	0.019	-1.593	1.893	1.700	-0.100
Wilcoxon Z-stat	0.298	-0.793	0.910	1.400	-4.594 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel France: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
France public companies (A)					
# Observations	11	11	10	11	10
Mean	0.773	35.482	83.121	16.717	0.318
Median	0.815	1.666	83.240	16.850	0.262
Other Western Countries public companies (B)					
# Observations	39	39	36	36	36
Mean	0.799	26.507	63.140	18.312	0.267
Median	0.618	24.673	52.631	18.460	0.179
Difference between means ((B) - (A))	0.026	-8.975	-19.981	1.595	-0.051
T-stat	0.116	-0.168	-1.384	0.215	-0.423
Difference between medians ((B) - (A))	-0.197	23.007	-30.609	1.610	-0.083
Wilcoxon Z-stat	-2.073 **	0.480	-1.305	0.678	-1.625

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Germany: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Germany public companies (A)					
# Observations	280	238	268	272	268
Mean	0.553	359.298	54.784	18.059	0.153
Median	0.548	14.847	50.965	16.935	0.131
Other Western Countries public companies (B)					
# Observations	335	334	313	323	313
Mean	0.709	53.592	71.101	18.231	0.312
Median	0.729	5.671	41.886	14.820	0.170
Difference between means ((B) - (A))	0.156	-305.706	16.317	0.172	0.159
T-stat	8.578 ***	-1.234	0.562	0.121	1.686 **
Difference between medians ((B) - (A))	0.181	-9.176	-9.079	-2.115	0.039
Wilcoxon Z-stat	8.672 ***	-3.956 ***	-7.291 ***	-2.139 **	3.799 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Germany: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Germany public companies (A)					
# Observations	110	72	106	103	106
Mean	0.626	-15.184	61.747	2.319	0.403
Median	0.645	0.736	42.976	5.780	0.365
Other Western Countries public companies (B)					
# Observations	572	566	546	540	546
Mean	0.825	12.287	46.158	7.941	0.357
Median	0.732	2.374	37.023	6.415	0.295
Difference between means ((B) - (A))	0.199	27.471	-15.589	5.622	-0.046
T-stat	1.221	1.503	-1.132	2.682 ***	-1.042
Difference between medians ((B) - (A))	0.087	1.638	-5.953	0.635	-0.070
Wilcoxon Z-stat	3.361 ***	2.168 **	-2.140 **	1.088	-3.274 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Germany: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Germany public companies (A)					
# Observations	34	21	32	31	32
Mean	0.641	202.080	74.773	8.365	0.255
Median	0.682	0.300	54.438	9.360	0.194
Other Western Countries public companies (B)					
# Observations	219	218	192	203	192
Mean	0.926	17.139	47.625	5.778	0.512
Median	0.678	4.511	45.067	7.300	0.217
Difference between means ((B) - (A))	0.285	-184.941	-27.148	-2.587	0.257
T-stat	0.621	-2.921 ***	-3.203 ***	-0.714	0.397
Difference between medians ((B) - (A))	-0.004	4.211	-9.371	-2.060	0.023
Wilcoxon Z-stat	-0.360	1.218	-2.283 **	-0.675	0.053

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Germany: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Germany public companies (A)					
# Observations	3	3	3	3	3
Mean	0.551	18.882	39.541	36.823	0.140
Median	0.551	24.673	58.411	32.440	0.126
Other Western Countries public companies (B)					
# Observations	47	47	43	44	43
Mean	0.809	29.094	69.433	16.651	0.287
Median	0.696	13.777	52.731	16.920	0.188
Difference between means ((B) - (A))	0.258	10.212	29.892	-20.172	0.147
T-stat	0.658	0.109	1.234	-1.618 *	0.738
Difference between medians ((B) - (A))	0.145	-10.896	-5.680	-15.520	0.062
Wilcoxon Z-stat	1.001	-0.143	-0.779	-1.871 *	1.134

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Italy: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Italy public companies (A)					
# Observations	186	186	184	186	184
Mean	0.711	41.661	42.066	14.073	0.198
Median	0.735	2.392	41.367	11.985	0.177
Other Western Countries public companies (B)					
# Observations	429	386	397	409	397
Mean	0.606	247.833	73.543	20.007	0.257
Median	0.598	14.657	50.188	17.870	0.139
Difference between means ((B) - (A))	-0.105	206.172	31.477	5.934	0.059
T-stat	-5.123 ***	0.790	1.012	3.935 ***	0.582
Difference between medians ((B) - (A))	-0.137	12.265	8.821	5.885	-0.038
Wilcoxon Z-stat	-5.522 ***	6.481 ***	7.298 ***	6.272 ***	-2.593 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Italy: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Italy public companies (A)					
# Observations	128	128	127	127	127
Mean	0.718	8.450	46.405	11.717	0.384
Median	0.752	0.104	40.112	9.400	0.404
Other Western Countries public companies (B)					
# Observations	554	510	525	516	525
Mean	0.811	9.371	49.246	5.889	0.360
Median	0.714	2.504	35.886	6.045	0.301
Difference between means ((B) - (A))	0.093	0.921	2.841	-5.828	-0.024
T-stat	0.604	0.063	0.221	-3.023 ***	-0.580
Difference between medians ((B) - (A))	-0.038	2.400	-4.226	-3.355	-0.103
Wilcoxon Z-stat	-0.874	2.160 **	-4.299 ***	-3.668 ***	-2.538 **

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Italy: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Italy public companies (A)					
# Observations	41	41	40	41	40
Mean	0.718	11.424	40.402	9.595	0.174
Median	0.750	3.060	40.504	9.560	0.149
Other Western Countries public companies (B)					
# Observations	212	198	184	193	184
Mean	0.921	37.937	53.916	5.383	0.541
Median	0.669	4.628	47.337	6.900	0.228
Difference between means ((B) - (A))	0.203	26.513	13.514	-4.212	0.367
T-stat	0.477	0.548	1.717 **	-1.308 *	0.621
Difference between medians ((B) - (A))	-0.081	1.568	6.833	-2.660	0.079
Wilcoxon Z-stat	-1.317	0.151	3.055 ***	-1.853 *	3.548 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Italy: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Italy public companies (A)					
# Observations	6	6	6	6	6
Mean	0.727	-10.460	57.837	15.323	0.238
Median	0.748	0.913	47.065	17.110	0.258
Other Western Countries public companies (B)					
# Observations	44	44	40	41	40
Mean	0.802	33.791	68.931	18.322	0.284
Median	0.626	26.580	56.432	18.480	0.179
Difference between means ((B) - (A))	0.075	44.251	11.094	2.999	0.046
T-stat	0.261	0.652	0.616	0.319	0.314
Difference between medians ((B) - (A))	-0.122	25.667	9.367	1.370	-0.079
Wilcoxon Z-stat	-0.716	1.612	0.522	0.733	-0.783

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Poland: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Poland public companies (A)					
# Observations	85	97	47	47	47
Mean	0.316	1.843	10.297	13.782	0.162
Median	0.264	1.337	8.678	11.460	0.158
Other Eastern Countries public companies (B)					
# Observations	53	53	47	40	47
Mean	0.503	27.056	7.972	13.791	0.428
Median	0.400	1.386	6.131	15.565	0.131
Difference between means ((B) - (A))	0.187	25.213	-2.325	0.009	0.266
T-stat	3.462 ***	3.708 ***	-2.009 **	0.002	1.067
Difference between medians ((B) - (A))	0.136	0.049	-2.547	4.105	-0.027
Wilcoxon Z-stat	3.343 ***	1.325	-3.150 ***	0.571	-0.464

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Poland: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Poland public companies (A)					
# Observations	136	172	115	114	115
Mean	0.391	69.818	11.824	8.135	0.304
Median	0.325	0.082	6.282	6.810	0.299
Other Eastern Countries public companies (B)					
# Observations	98	95	93	73	93
Mean	0.932	-0.786	7.012	7.700	0.447
Median	0.575	0.313	4.555	7.850	0.286
Difference between means ((B) - (A))	0.541	-70.604	-4.812	-0.435	0.143
T-stat	4.076 ***	-0.781	-1.416 *	-0.169	2.509 ***
Difference between medians ((B) - (A))	0.250	0.231	-1.727	1.040	-0.013
Wilcoxon Z-stat	5.291 ***	0.166	-3.781 ***	0.397	-0.460

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Poland: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Poland public companies (A)					
# Observations	249	332	175	172	175
Mean	0.556	4.023	38.191	3.539	0.237
Median	0.424	0.312	6.827	4.345	0.221
Other Eastern Countries public companies (B)					
# Observations	313	303	289	238	289
Mean	0.847	-0.796	3.820	6.582	0.338
Median	0.489	0.053	3.118	8.540	0.211
Difference between means ((B) - (A))	0.291	-4.819	-34.371	3.043	0.101
T-stat	2.168 **	-0.997	-1.524 *	1.552 *	2.597 ***
Difference between medians ((B) - (A))	0.065	-0.259	-3.709	4.195	-0.010
Wilcoxon Z-stat	3.089 ***	-1.984 **	-12.986 ***	3.308 ***	-0.470

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Poland: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Poland public companies (A)					
# Observations	16	22	15	15	15
Mean	0.327	5.544	14.948	15.673	0.354
Median	0.257	1.391	12.740	13.200	0.387
Other Eastern Countries public companies (B)					
# Observations	18	18	15	15	15
Mean	0.343	41.085	9.039	31.502	0.218
Median	0.199	6.425	8.471	33.550	0.226
Difference between means ((B) - (A))	0.016	35.541	-5.909	15.829	-0.136
T-stat	0.156	2.156 **	-2.897 ***	2.358 **	-2.813 ***
Difference between medians ((B) - (A))	-0.058	5.034	-4.269	20.350	-0.161
Wilcoxon Z-stat	-0.035	1.957 *	-2.178 **	2.385 **	-2.966 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Romania: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Romania public companies (A)					
# Observations	21	21	21	14	21
Mean	0.676	2.790	5.432	0.205	0.814
Median	0.497	0.080	4.173	4.610	0.231
Other Eastern Countries public companies (B)					
# Observations	117	129	73	73	73
Mean	0.336	12.047	10.199	16.391	0.146
Median	0.294	1.670	8.608	14.280	0.137
Difference between means ((B) - (A))	-0.340	9.257	4.767	16.186	-0.668
T-stat	-4.826 ***	0.948	3.585 ***	3.743 ***	-2.277 **
Difference between medians ((B) - (A))	-0.203	1.590	4.435	9.670	-0.094
Wilcoxon Z-stat	-3.429 ***	1.939 *	3.917 ***	3.142 ***	-2.719 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Romania: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Romania public companies (A)					
# Observations	49	47	49	35	49
Mean	1.316	-0.967	6.099	3.444	0.503
Median	0.784	0.137	4.194	5.160	0.308
Other Eastern Countries public companies (B)					
# Observations	185	220	159	152	159
Mean	0.433	54.453	10.773	9.006	0.327
Median	0.359	0.103	6.282	7.280	0.293
Difference between means ((B) - (A))	-0.883	55.420	4.674	5.562	-0.176
T-stat	-5.656 ***	0.487	1.172	1.743 **	-2.630 ***
Difference between medians ((B) - (A))	-0.425	-0.034	2.088	2.120	-0.015
Wilcoxon Z-stat	-5.470 ***	-0.554	4.075 ***	1.545	-0.691

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Romania: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Romania public companies (A)					
# Observations	99	98	98	63	98
Mean	1.235	-2.408	3.967	-0.758	0.384
Median	0.558	-0.011	3.383	3.720	0.251
Other Eastern Countries public companies (B)					
# Observations	463	537	366	347	366
Mean	0.607	2.478	20.215	6.407	0.278
Median	0.443	0.265	4.988	6.860	0.209
Difference between means ((B) - (A))	-0.628	4.886	16.248	7.165	-0.106
T-stat	-3.614 ***	0.731	0.605	2.687 ***	-2.291 **
Difference between medians ((B) - (A))	-0.115	0.276	1.605	3.140	-0.042
Wilcoxon Z-stat	-2.948 ***	3.419 ***	3.669 ***	2.150 **	-2.796 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Romania: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Romania public companies (A)					
# Observations	8	8	8	8	8
Mean	0.489	38.622	7.822	21.263	0.296
Median	0.417	0.832	5.829	18.010	0.312
Other Eastern Countries public companies (B)					
# Observations	26	32	22	22	22
Mean	0.288	17.266	13.510	24.432	0.283
Median	0.207	2.140	12.515	15.835	0.359
Difference between means ((B) - (A))	-0.201	-21.356	5.688	3.169	-0.013
T-stat	-1.777 **	-0.996	2.371 **	0.382	-0.212
Difference between medians ((B) - (A))	-0.210	1.308	6.686	-2.175	0.047
Wilcoxon Z-stat	-1.583	1.386	2.017 **	-0.469	0.422

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Sweden: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Sweden public companies (A)					
# Observations	7	7	7	7	7
Mean	0.607	53.645	37.355	34.370	0.077
Median	0.635	37.556	38.220	30.520	0.076
Other Western Countries public companies (B)					
# Observations	608	565	574	588	574
Mean	0.638	182.367	63.894	17.960	0.240
Median	0.628	9.878	46.502	15.950	0.146
Difference between means ((B) - (A))	0.031	128.722	26.539	-16.410	0.163
T-stat	0.346	0.115	0.200	-2.512 ***	0.379
Difference between medians ((B) - (A))	-0.007	-27.678	8.282	-14.570	0.070
Wilcoxon Z-stat	-0.368	-2.245 **	1.441	-3.185 ***	2.392 **

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Sweden: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Sweden public companies (A)					
# Observations	13	13	13	12	13
Mean	0.628	5.397	34.159	8.661	0.395
Median	0.673	1.933	32.159	7.170	0.202
Other Western Countries public companies (B)					
# Observations	669	625	639	631	639
Mean	0.796	9.265	48.988	7.009	0.364
Median	0.720	2.065	38.007	6.340	0.318
Difference between means ((B) - (A))	0.168	3.868	14.829	-1.652	-0.031
T-stat	0.382	0.094	0.407	-0.289	-0.267
Difference between medians ((B) - (A))	0.047	0.132	5.848	-0.830	0.116
Wilcoxon Z-stat	0.944	0.951	1.114	-0.416	2.383 **

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Sweden: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Sweden public companies (A)					
# Observations	9	9	8	8	8
Mean	0.595	14.492	36.002	7.571	0.158
Median	0.641	10.490	36.219	5.765	0.145
Other Western Countries public companies (B)					
# Observations	244	230	216	226	216
Mean	0.899	34.128	52.077	6.070	0.488
Median	0.683	4.107	46.423	7.340	0.217
Difference between means ((B) - (A))	0.304	19.636	16.075	-1.501	0.330
T-stat	0.359	0.205	0.985	-0.222	0.270
Difference between medians ((B) - (A))	0.042	-6.383	10.204	1.575	0.072
Wilcoxon Z-stat	0.793	-0.786	2.378 **	0.292	1.700 *

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Sweden: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Sweden public companies (A)					
# Observations	3	3	3	3	3
Mean	0.434	39.262	42.026	24.070	0.118
Median	0.409	42.317	45.243	27.150	0.111
Other Western Countries public companies (B)					
# Observations	47	47	43	44	43
Mean	0.816	27.793	69.260	17.521	0.289
Median	0.696	10.552	58.411	17.715	0.200
Difference between means ((B) - (A))	0.382	-11.469	27.234	-6.549	0.171
T-stat	0.980	-0.123	1.121	-0.512	0.885
Difference between medians ((B) - (A))	0.287	-31.765	13.168	-9.435	0.089
Wilcoxon Z-stat	1.859 *	-0.919	1.268	-0.566	1.757 *

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Uk: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Uk public companies (A)					
# Observations	22	22	16	16	16
Mean	0.811	76.912	55.333	31.375	2.323
Median	0.824	15.893	53.698	21.510	0.166
Other Western Countries public companies (B)					
# Observations	593	550	565	579	565
Mean	0.631	184.947	63.808	17.787	0.180
Median	0.621	10.117	46.327	15.960	0.145
Difference between means ((B) - (A))	-0.180	108.035	8.475	-13.588	-2.143
T-stat	-3.521 ***	0.169	0.095	-3.129 ***	-7.830 ***
Difference between medians ((B) - (A))	-0.203	-5.776	-7.371	-5.550	-0.021
Wilcoxon Z-stat	-3.205 ***	-0.582	-1.278	-1.563	-1.309

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Uk: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Uk public companies (A)					
# Observations	53	53	53	50	53
Mean	0.858	22.184	46.436	9.113	0.393
Median	0.782	1.599	38.936	5.570	0.355
Other Western Countries public companies (B)					
# Observations	629	585	599	593	599
Mean	0.788	8.009	48.892	6.866	0.362
Median	0.713	2.065	37.877	6.360	0.308
Difference between means ((B) - (A))	-0.070	-14.175	2.456	-2.247	-0.031
T-stat	-0.311	-0.675	0.132	-0.799	-0.511
Difference between medians ((B) - (A))	-0.069	0.466	-1.059	0.790	-0.047
Wilcoxon Z-stat	-2.051 **	0.810	-0.538	0.396	-1.230

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

228

Panel Uk: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Uk public companies (A)					
# Observations	53	53	53	50	53
Mean	0.858	22.184	46.436	9.113	0.393
Median	0.782	1.599	38.936	5.570	0.355
Other Western Countries public companies (B)					
# Observations	629	585	599	593	599
Mean	0.788	8.009	48.892	6.866	0.362
Median	0.713	2.065	37.877	6.360	0.308
Difference between means ((B) - (A))	-0.070	-14.175	2.456	-2.247	-0.031
T-stat	-0.311	-0.675	0.132	-0.799	-0.511
Difference between medians ((B) - (A))	-0.069	0.466	-1.059	0.790	-0.047
Wilcoxon Z-stat	-2.051 **	0.810	-0.538	0.396	-1.230

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: the data are referring to year 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Uk: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Uk public companies (A)					
# Observations	32	32	31	30	31
Mean	0.857	10.303	55.271	3.720	1.884
Median	0.778	2.946	51.424	5.305	0.241
Other Western Countries public companies (B)					
# Observations	221	207	193	204	193
Mean	0.893	36.957	50.898	6.474	0.250
Median	0.669	4.389	45.000	7.795	0.212
Difference between means ((B) - (A))	0.036	26.654	-4.373	2.754	-1.634
T-stat	0.076	0.497	-0.498	0.750	-2.525 ***
Difference between medians ((B) - (A))	-0.109	1.443	-6.424	2.490	-0.029
Wilcoxon Z-stat	-2.112 **	0.517	-3.086 ***	1.447	-0.718

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Uk: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Uk public companies (A)					
# Observations	10	10	10	8	10
Mean	0.989	113.935	88.545	-0.490	0.198
Median	0.621	98.844	103.506	9.745	0.177
Other Western Countries public companies (B)					
# Observations	40	40	36	39	36
Mean	0.744	7.118	61.633	21.719	0.300
Median	0.662	12.164	50.089	23.850	0.185
Difference between means ((B) - (A))	-0.245	-106.817	-26.912	22.209	0.102
T-stat	-1.061	-2.009 **	-1.897 **	2.902 ***	0.857
Difference between medians ((B) - (A))	0.041	-86.680	-53.417	14.105	0.008
Wilcoxon Z-stat	0.073	-1.043	-1.864 *	2.123 **	0.586

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel West_East: Utilities

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Western Countries public companies (A)					
# Observations	615	572	581	595	581
Mean	0.637	180.791	63.574	18.152	0.238
Median	0.628	10.219	46.353	16.080	0.145
Eastern Countries public companies (B)					
# Observations	138	150	94	87	94
Mean	0.387	10.751	9.134	13.786	0.295
Median	0.331	1.377	7.904	12.670	0.147
Difference between means ((B) - (A))	-0.250	-170.040	-54.440	-4.366	0.057
T-stat	-10.407 ***	-0.712	-1.512 *	-2.225 **	0.445
Difference between medians ((B) - (A))	-0.297	-8.842	-38.449	-3.410	0.002
Wilcoxon Z-stat	-10.177 ***	-6.697 ***	-14.364 ***	-2.373 **	0.156

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel West_East: Transports

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Western Countries public companies (A)					
# Observations	682	638	652	643	652
Mean	0.793	9.187	48.693	7.040	0.365
Median	0.719	2.042	37.938	6.360	0.312
Eastern Countries public companies (B)					
# Observations	234	267	208	187	208
Mean	0.618	44.697	9.673	7.965	0.368
Median	0.413	0.103	6.036	7.150	0.294
Difference between means ((B) - (A))	-0.175	35.510	-39.020	0.925	0.003
T-stat	-1.592 *	1.210	-4.312 ***	0.584	0.101
Difference between medians ((B) - (A))	-0.306	-1.939	-31.902	0.790	-0.018
Wilcoxon Z-stat	-10.124 ***	-5.436 ***	-20.407 ***	0.470	-1.584

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel West_East: Manufacturing

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Western Countries public companies (A)					
# Observations	253	239	224	234	224
Mean	0.888	33.389	51.503	6.121	0.476
Median	0.678	4.250	46.202	7.320	0.214
Eastern Countries public companies (B)					
# Observations	562	635	464	410	464
Mean	0.718	1.723	16.783	5.306	0.300
Median	0.457	0.176	4.183	6.275	0.215
Difference between means ((B) - (A))	-0.170	-31.666	-34.720	-0.815	-0.176
T-stat	-1.177	-2.677 ***	-2.184 **	-0.515	-1.102
Difference between medians ((B) - (A))	-0.221	-4.074	-42.019	-1.045	0.001
Wilcoxon Z-stat	-7.061 ***	-8.309 ***	-20.825 ***	-1.363	0.454

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel West-East: Tlc

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Western Countries public companies (A)					
# Observations	50	50	46	47	46
Mean	0.793	28.481	67.484	17.939	0.278
Median	0.640	18.009	53.591	18.440	0.185
Eastern Countries public companies (B)					
# Observations	34	40	30	30	30
Mean	0.335	21.537	11.993	23.587	0.286
Median	0.233	2.037	12.255	15.835	0.342
Difference between means ((B) - (A))	-0.458	-6.944	-55.491	5.648	0.008
T-stat	-3.828 ***	-0.270	-7.376 ***	1.168	0.130
Difference between medians ((B) - (A))	-0.407	-15.972	-41.336	-2.605	0.157
Wilcoxon Z-stat	-4.839 ***	-0.893	-6.493 ***	-0.554	1.668 *

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Uitilities: Central and Local Government

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_ Revenues
Local Government (A)					
# Observations	547	509	531	531	531
Mean	0.626	43.081	47.143	17.006	0.258
Median	0.615	8.367	45.400	15.500	0.153
Central Government (B)					
# Observations	206	213	144	151	144
Mean	0.501	390.128	88.629	19.670	0.206
Median	0.490	3.423	14.638	17.240	0.118
Difference between means ((B) - (A))	-0.125	347.047	41.486	2.664	-0.052
T-stat	-5.710 ***	1.637 *	1.363 *	1.687 **	-0.485
Difference between medians ((B) - (A))	-0.125	-4.944	-30.762	1.740	-0.035
Wilcoxon Z-stat	-5.660 ***	-1.660 *	-7.318 ***	0.957	-3.611 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Transports: Central and Local Government

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_ Revenues
Local Government (A)					
# Observations	304	274	301	295	301
Mean	0.712	2.292	48.183	7.792	0.472
Median	0.657	0.355	39.997	9.360	0.407
Central Government (B)					
# Observations	612	631	559	535	559
Mean	0.767	27.207	34.448	6.950	0.309
Median	0.674	0.930	29.031	6.080	0.263
Difference between means ((B) - (A))	0.055	24.915	-13.735	-0.842	-0.163
T-stat	0.544	0.855	-1.676 **	-0.609	-5.559 ***
Difference between medians ((B) - (A))	0.017	0.575	-10.966	-3.280	-0.144
Wilcoxon Z-stat	0.796	1.939 *	-9.884 ***	-3.550 ***	-8.710 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Manufacturing: Central and Local Government

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_ Revenues
Local Government (A)					
# Observations	97	95	92	89	92
Mean	0.864	49.999	41.081	5.045	0.275
Median	0.681	1.258	32.382	8.620	0.202
Central Government (B)					
# Observations	718	779	596	555	596
Mean	0.758	5.551	26.082	5.691	0.370
Median	0.522	0.333	6.000	6.620	0.217
Difference between means ((B) - (A))	-0.106	-44.448	-14.999	0.646	0.095
T-stat	-0.509	-2.623 ***	-0.683	0.293	0.437
Difference between medians ((B) - (A))	-0.159	-0.925	-26.382	-2.000	0.015
Wilcoxon Z-stat	-3.194 ***	-2.014 **	-5.957 ***	-1.304	0.302

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Tlc: Central and Local Government

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_ Revenues
Local Government (A)					
# Observations	14	14	14	14	14
Mean	0.642	-27.143	44.251	12.942	0.328
Median	0.625	0.488	43.640	9.870	0.229
Central Government (B)					
# Observations	70	76	62	63	62
Mean	0.601	35.073	45.880	21.739	0.270
Median	0.556	3.883	22.377	18.440	0.228
Difference between means ((B) - (A))	-0.041	62.216	1.629	8.797	-0.058
T-stat	-0.241	1.797 **	0.130	1.445 *	-0.711
Difference between medians ((B) - (A))	-0.069	3.395	-21.263	8.570	-0.001
Wilcoxon Z-stat	-0.996	2.449 **	-0.898	1.704 *	-0.911

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel Utilities: Central/Local (Total Public v. Partial Public)

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_Revenues
Central Total public companies (A)					
# Observations	73	80	44	44	44
Mean	0.379	20.877	14.656	15.858	0.184
Median	0.307	0.782	7.905	13.725	0.149
Central Partial public companies (B)					
# Observations	44	45	30	32	30
Mean	0.421	19.261	24.415	16.648	0.176
Median	0.423	4.213	8.342	15.150	0.120
Difference between means ((B) - (A))	0.042	-1.616	9.759	0.790	-0.008
T-stat	0.713	-0.117	1.635	0.175	-0.241
Difference between medians ((B) - (A))	0.116	3.431	0.437	1.425	-0.029
Wilcoxon Z-stat	1.255	2.677 ***	0.385	0.063	-0.639
Local Total public companies (C)					
# Observations	154	144	151	153	151
Mean	0.617	40.264	44.074	15.114	0.213
Median	0.599	5.723	45.461	14.650	0.169
Local Partial public companies (D)					
# Observations	283	272	277	276	277
Mean	0.613	47.245	48.747	18.889	0.214
Median	0.607	11.058	46.772	16.735	0.144
Difference between means ((D) - (C))	-0.004	6.981	4.673	3.775	0.001
T-stat	-0.174	0.218	1.350	2.617 ***	0.025
Difference between medians ((D) - (C))	0.008	5.335	1.311	2.085	-0.025
Wilcoxon Z-stat	0.170	4.319 ***	1.226	2.601 ***	-3.286 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel Transports: Central/Local (Total Public v. Partial Public)

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda Margin (%)	Labour Cost/Operat_Revenues
Central Total public companies (A)					
# Observations	149	166	125	121	125
Mean	0.500	65.636	15.849	8.985	0.322
Median	0.406	0.087	6.254	7.350	0.308
Central Partial public companies (B)					
# Observations	68	74	62	52	62
Mean	0.680	4.269	12.043	6.068	0.373
Median	0.490	0.223	4.767	7.025	0.261
Difference between means ((B) - (A))	0.180	-61.367	-3.806	-2.917	0.051
T-stat	1.956 **	-0.585	-0.933	-0.986	1.001
Difference between medians ((B) - (A))	0.084	0.136	-1.487	-0.325	-0.047
Wilcoxon Z-stat	1.394	0.101	-2.893 ***	-0.366	-1.200
Local Total public companies (C)					
# Observations	66	65	67	68	67
Mean	0.738	-0.147	35.590	3.382	0.525
Median	0.654	0.250	38.007	7.670	0.491
Local Partial public companies (D)					
# Observations	175	152	171	167	171
Mean	0.692	-5.400	45.022	8.311	0.486
Median	0.629	0.504	41.470	10.470	0.398
Difference between means ((D) - (C))	-0.046	-5.253	9.432	4.929	-0.039
T-stat	-0.382	-0.414	1.699 **	1.270	-0.428
Difference between medians ((D) - (C))	-0.025	0.254	3.463	2.800	-0.093
Wilcoxon Z-stat	-0.777	1.409	3.266 ***	1.958 *	-2.689 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel Manufacturing: Central/Local (Total Public v. Partial Public)

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_Revenues
Central Total public companies (A)					
# Observations	180	225	146	134	146
Mean	0.676	10.172	44.086	2.925	0.308
Median	0.427	0.200	5.783	4.095	0.247
Central Partial public companies (B)					
# Observations	294	306	239	209	239
Mean	0.751	-0.135	6.967	8.300	0.310
Median	0.497	0.178	3.200	8.610	0.208
Difference between means ((B) - (A))	0.075	-10.307	-37.119	5.375	0.002
T-stat	0.489	-1.563 *	-1.368 *	2.706 ***	0.033
Difference between medians ((B) - (A))	0.070	-0.022	-2.583	4.515	-0.039
Wilcoxon Z-stat	1.909 *	-0.832	-7.175 ***	3.627 ***	-2.083 **
Local Total public companies (C)					
# Observations	8	8	8	8	8
Mean	0.760	0.592	71.376	3.091	0.433
Median	0.549	0.933	48.105	3.350	0.491
Local Partial public companies (D)					
# Observations	39	39	34	33	34
Mean	1.149	-0.332	23.304	3.838	0.311
Median	0.573	0.774	11.688	8.620	0.216
Difference between means ((D) - (C))	0.389	-0.924	-48.072	0.747	-0.122
T-stat	0.514	-0.128	-2.897 ***	0.061	-0.935
Difference between medians ((D) - (C))	0.024	-0.159	-36.417	5.270	-0.275
Wilcoxon Z-stat	0.142	-0.425	-2.434 **	1.020	-1.505

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel Tlc: Central/Local (Total Public v. Partial Public)

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_Revenues
Central Total public companies (A)					
# Observations	25	30	23	23	23
Mean	0.438	10.087	20.617	17.616	0.324
Median	0.448	1.634	12.291	14.560	0.370
Central Partial public companies (B)					
# Observations	13	14	12	12	12
Mean	0.563	24.230	57.423	28.988	0.234
Median	0.621	23.364	49.326	24.645	0.183
Difference between means ((B) - (A))	0.125	14.143	36.806	11.372	-0.090
T-stat	1.268	1.974 **	3.628 ***	1.876 **	-1.749 **
Difference between medians ((B) - (A))	0.173	21.730	37.035	10.085	-0.187
Wilcoxon Z-stat	1.369	1.865 *	3.023 ***	1.251	-1.772 *
Local Total public companies (C)					
# Observations	3	3	3	3	3
Mean	0.912	-0.679	33.703	-4.153	0.557
Median	0.728	1.809	31.786	3.110	0.566
Local Partial public companies (D)					
# Observations	6	6	6	6	6
Mean	0.645	-42.176	50.460	14.673	0.293
Median	0.640	-2.950	46.723	13.960	0.229
Difference between means ((D) - (C))	-0.267	-41.497	16.757	18.826	-0.264
T-stat	-1.064	-0.643	1.753 *	1.394	-367.000
Difference between medians ((D) - (C))	-0.088	-4.759	14.937	10.850	-0.337
Wilcoxon Z-stat	-0.516	-0.258	1.807 *	1.033	-0.775

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel A: Central/Local (Debt Ratio)

Sector	Transports	Utilities	Manufacturing	Tlc
Central Total public companies (A)				
# Observations	149	73	180	25
Mean	0.500	0.379	0.676	0.438
Median	0.406	0.307	0.427	0.448
Central Partial public companies (B)				
# Observations	68	44	294	13
Mean	0.680	0.421	0.751	0.563
Median	0.490	0.423	0.497	0.621
Difference between means ((B) - (A))	0.180	0.042	0.075	0.125
T-stat	1.956 **	0.713	0.489	1.268
Difference between medians ((B) - (A))	0.084	0.116	0.070	0.173
Wilcoxon Z-stat	1.394	1.255	1.909 *	1.369
Local Total public companies (C)				
# Observations	66	154	8	3
Mean	0.738	0.617	0.760	0.912
Median	0.654	0.599	0.549	0.728
Local Partial public companies (D)				
# Observations	175	283	39	6
Mean	0.692	0.613	1.149	0.645
Median	0.629	0.607	0.573	0.640
Difference between means ((D) - (C))	-0.046	-0.004	0.389	-0.267
T-stat	-0.382	-0.174	0.514	-1.064
Difference between medians ((D) - (C))	-0.025	0.008	0.024	-0.088
Wilcoxon Z-stat	-0.777	0.170	0.142	-0.516

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel B: Central/Local (Ebitda Margin %)

Sector	Transports	Utilities	Manufacturing	Tlc
Central Total public companies (A)				
# Observations	121	44	134	23
Mean	8.985	15.858	2.925	17.616
Median	7.350	13.725	4.095	14.560
Central Partial public companies (B)				
# Observations	52	32	209	12
Mean	6.068	16.648	8.300	28.988
Median	7.025	15.150	8.610	24.645
Difference between means ((B) - (A))	-2.917	0.790	5.375	11.372
T-stat	-0.986	0.175	2.706 ***	1.876 **
Difference between medians ((B) - (A))	-0.325	1.425	4.515	10.085
Wilcoxon Z-stat	-0.366	0.063	3.627 ***	1.251
Local Total public companies (C)				
# Observations	68	153	8	3
Mean	3.382	15.114	3.091	-4.153
Median	7.670	14.650	3.350	3.110
Local Partial public companies (D)				
# Observations	167	276	33	6
Mean	8.311	18.889	3.838	14.673
Median	10.470	16.735	8.620	13.960
Difference between means ((D) - (C))	4.929	3.775	0.747	18.826
T-stat	1.270	2.617 ***	0.061	1.394
Difference between medians ((D) - (C))	2.800	2.085	5.270	10.850
Wilcoxon Z-stat	1.958 *	2.601 ***	1.020	1.033

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel C: Central/Local (Net_Income)

Sector	Transports	Utilities	Manufacturing	Tlc
Central Total public companies (A)				
# Observations	166	80	225	30
Mean	65.636	20.877	10.172	10.087
Median	0.087	0.782	0.200	1.634
Central Partial public companies (B)				
# Observations	74	45	306	14
Mean	4.269	19.261	-0.135	24.230
Median	0.223	4.213	0.178	23.364
Difference between means ((B) - (A))	-61.367	-1.616	-10.307	14.143
T-stat	-0.585	-0.117	-1.563 *	1.974 **
Difference between medians ((B) - (A))	0.136	3.431	-0.022	21.730
Wilcoxon Z-stat	0.101	2.677 ***	-0.832	1.865 *
Local Total public companies (C)				
# Observations	65	144	8	3
Mean	-0.147	40.264	0.592	-0.679
Median	0.250	5.723	0.933	1.809
Local Partial public companies (D)				
# Observations	152	272	39	6
Mean	-5.400	47.245	-0.332	-42.176
Median	0.504	11.058	0.774	-2.950
Difference between means ((D) - (C))	-5.253	6.981	-0.924	-41.497
T-stat	-0.414	0.218	-0.128	-0.643
Difference between medians ((D) - (C))	0.254	5.335	-0.159	-4.759
Wilcoxon Z-stat	1.409	4.319 ***	-0.425	-0.258

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel D: Central/Local (Labour Cost)

Sector	Transports	Utilities	Manufacturing	Tlc
Central Total public companies (A)				
# Observations	125	44	146	23
Mean	15.849	14.656	44.086	20.617
Median	6.254	7.905	5.783	12.291
Central Partial public companies (B)				
# Observations	62	30	239	12
Mean	12.043	24.415	6.967	57.423
Median	4.767	8.342	3.200	49.326
Difference between means ((B) - (A))	-3.806	9.759	-37.119	36.806
T-stat	-0.933	1.635 *	-1.368 *	3.628 ***
Difference between medians ((B) - (A))	-1.487	0.437	-2.583	37.035
Wilcoxon Z-stat	-2.893 ***	0.385	-7.175 ***	3.023 ***
Local Total public companies (C)				
# Observations	67	151	8	3
Mean	35.590	44.074	71.376	33.703
Median	38.007	45.461	48.105	31.786
Local Partial public companies (D)				
# Observations	171	277	34	6
Mean	45.022	48.747	23.304	50.460
Median	41.470	46.772	11.688	46.723
Difference between means ((D) - (C))	9.432	4.673	-48.072	16.757
T-stat	1.699 **	1.350	-2.897 ***	1.753 *
Difference between medians ((D) - (C))	3.463	1.311	-36.417	14.937
Wilcoxon Z-stat	3.266 ***	1.226	-2.434 **	1.807 *

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

247

Panel E: Central/Local (Labour Cost/Operating Revenues)

Sector	Transports	Utilities	Manufacturing	Tlc
Central Total public companies (A)				
# Observations	125	44	146	23
Mean	0.322	0.184	0.308	0.324
Median	0.308	0.149	0.247	0.370
Central Partial public companies (B)				
# Observations	62	30	239	12
Mean	0.373	0.176	0.310	0.234
Median	0.261	0.120	0.208	0.183
Difference between means ((B) - (A))	0.051	-0.008	0.002	-0.090
T-stat	1.001	-0.241	0.033	-1.749 **
Difference between medians ((B) - (A))	-0.047	-0.029	-0.039	-0.187
Wilcoxon Z-stat	-1.200	-0.639	-2.083 **	-1.772 *
Local Total public companies (C)				
# Observations	67	151	8	3
Mean	0.525	0.213	0.433	0.557
Median	0.491	0.169	0.491	0.566
Local Partial public companies (D)				
# Observations	171	277	34	6
Mean	0.486	0.214	0.311	0.293
Median	0.398	0.144	0.216	0.229
Difference between means ((D) - (C))	-0.039	0.001	-0.122	-0.264
T-stat	-0.428	0.025	-0.935	-1.366
Difference between medians ((D) - (C))	-0.093	-0.025	-0.275	-0.337
Wilcoxon Z-stat	-2.689 ***	-3.286 ***	-1.505	-0.775

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Panel: Central and Local Government

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_ Revenues	Roa	Operating_re venues per employee
Total public companies (A)							
# Observations	1,527	1,649	1,409	1,347	1,409	1,763	1,729
Mean	0.632	143.857	60.565	9.871	0.393	-0.014	590.303
Median	0.493	0.393	14.276	8.760	0.285	0.010	46.650
Partial public companies (B)							
# Observations	1,826	1,763	1,646	1,565	1,646	5,325	1,868
Mean	0.803	60.654	31.824	12.333	0.385	-0.013	440.867
Median	0.579	1.000	32.535	11.250	0.221	0.012	83.354
Difference between means ((B) - (A))	0.171	-83.203	-28.741	2.462	-0.008	0.001	-149.436
T-stat	1.853 **	-1.262	-1.111	2.981 **	-0.135	0.663	-0.898
Difference between medians ((B) - (A))	0.086	0.607	18.259	2.490	-0.064	0.002	36.704
Wilcoxon Z-stat	6.769 ***	5.188 ***	0.466	4.861 ***	-6.116 ***	0.034 **	4.776 ***

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel: Central Government

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_ Revenues	Roa	Operating_re venues per employee
Total public companies (A)							
# Observations	915	1,088	817	777	817	1,088	1,110
Mean	0.622	165.657	71.990	8.278	0.388	-0.006	575.050
Median	0.360	0.367	6.950	7.320	0.302	0.011	27.833
Partial public companies (B)							
# Observations	768	793	656	603	656	793	807
Mean	0.795	48.711	11.926	8.642	0.305	-0.014	200.352
Median	0.491	0.375	3.825	8.300	0.217	0.010	26.600
Difference between means ((B) - (A))	0.173	-116.946	-60.064	0.364	-0.083	-0.008	-374.698
T-stat	1.018	-1.110	-1.118	0.336	-1.898 **	-0.431	-1.326 *
Difference between medians ((B) - (A))	0.131	0.008	-3.125	0.980	-0.085	-0.001	-1.233
Wilcoxon Z-stat	6.087 ***	0.360	-12.401 ***	0.274	-6.046 ***	-0.063	-2.474 **

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).

Panel: Local Government

Financial Index	Debt_ratio	Net_income	Labour_cost	Ebitda	Labour Cost/Operat_ Revenues	Roa	Operating_re venues per employee
Total public companies (A)							
# Observations	612	561	592	570	592	561	619
Mean	0.645	101.578	44.797	12.043	0.402	-0.063	617.653
Median	0.619	0.833	42.015	11.920	0.226	0.004	162.529
Partial public companies (B)							
# Observations	1,058	970	990	962	990	970	1,061
Mean	0.808	70.417	45.010	14.647	0.439	-0.013	623.803
Median	0.647	3.000	42.548	14.320	0.223	0.009	167.707
Difference between menas ((B) - (A))	0.163	-31.161	0.213	2.604	0.037	0.050	6.150
T-stat	2.190 **	-0.415	0.078	2.063 **	0.340	1.666 **	0.037
Difference between Medinas ((B) - (A))	0.028	2.167	0.533	2.400	-0.003	0.005	5.178
Wilcoxon Z-stat	0.608	5.248 ***	1.329	3.057 ***	-2.618 ***	4.843 ***	0.779

*-**- *** denotes statistical significance at 10, 5 and 1% leves respectively.

Observation is the number of observations in the sample

Mean is the aritmetic mean.

Median is the value separating the higher half of a sample from the lower half.

T-stat is a statistical test for the difference between two sample means.

Z-stat is a statistical test for the difference between to sample medians.

Note: The data refer to 2005.

Source: *AMADEUS Database* (Bureau van Dijk).