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**An Institutional Analysis of Cost Accounting Practices in the Spanish Eighteenth Century**

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*Keywords:* Institutional Analysis, Cost Accounting, Spanish Eighteenth Century..



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# *An Institutional Analysis of Cost Accounting Practices in the Spanish Eighteenth Century.*

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**Abstract**

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A growing body of literature (Johnson, 1972; Tyson, 1990; Fleischman and Parker, 1990 and 1991; Edwards and Newell, 1991 and Fleischman et al., 1996) has evidenced that sophisticated costing techniques were used in the early stages of the Industrial Revolution for efficiency reasons. However, some scholars have questioned the role of efficiency (Hoskin and Macve, 1988; Miller, 1994, Carmona et al., 1997, 1998 and 2002 and Gutiérrez et al., 2005) and have suggested institutional explanations for the development of cost accounting.

The purpose of this research is to extend this institutional explanation of accounting spreading in the second half of the 18th century, Enlightenment Century Spain. With this aim, this work explores the changes that took place in six organizations depended of the Crown. The study reveals the importance of the role played by a group of managers belonging to the Spanish Enlightenment Movement.

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## **An Institutional Analysis of Cost Accounting Practices in the Spanish Eighteenth Century.**

### **1. INTRODUCTION**

Accounting history has established that a sophisticated knowledge and use of advanced cost accounting techniques existed during the second half of the eighteenth century and the first half of the nineteenth one (see Fleischman and Tyson, 1993). This innovation in the knowledge and use of cost accounting has been explained by the (using Loft's, 1995 terms) *neoclassical revisionists* on the basis of businessmen leadership (Fleischman and Parker, 1990). "*It is difficult to imagine that the entrepreneurs of the British and US industrial revolutions would have failed to appreciate the interrelationships between cost accounting and effective management*" (Fleischman and Tyson, 1993, p. 503). Fleischman and Parker (1991) contend that while earlier accounting historians believed that entrepreneurs neglected production cost because profit margins were so substantial during the industrial revolution, this interpretation should be revised. They assert that both the iron and the textile industry experienced periods of strong competition that might have resulted in about the same innovations in cost accounting. Thus, for example, at the Carron case, cost management practices were developed in order to preserve profitability (Fleischman and Parker, 1990).

Other studies (Carmona *et al.*, 1997; Prieto and Larrinaga, 2001 and Gutiérrez *et al.*, 2005) have reported a high level of sophistication in cost accounting since 1760 in Spain. They also have showed that costing practices were similar in disparate companies and factories for the period 1760-1800. Additionally, the explanation provided by the Neoclassic Revisionist School does not capture all the interpretative elements for the Spanish case. Moreover, some scholars have studied these costing practices from an Institutional Sociological perspective gaining interesting insights (Carmona *et al.*, 1998; Carmona and Macías, 2002).

Therefore, the purpose of this paper is to extend the institutional explanation of the development of cost accounting in the second half of the eighteenth century using Spanish cases. In detail, we have tried to answer the following four questions. First, we want to know why costing practices emerged and were in conformity with their environment, in the second half of the eighteenth century. Second, we want to know why disparate companies and organizations used similar accounting practices. Third, we would know the essential reasons and believes that moved to an elitist group of people in those organizations to improve the management of their single organization. And finally, given the fact that the search for efficiency does not seem a convincing explanation in the Spanish context, the paper tries to explore what was the role of cost accounting in these organizations and what was the reason of its development and standardizations.

Therefore, we pretend to study, using the framework of the Institutional Theory, the acting of normative pressure in the configurations of the accounting in public organization and its relationship with the Spanish Enlightenment Movement. Concretely, we pretend to see how the accounting system had a similar configuration in disparate organizations because they were managed by a group of elitist managers with similar believes. That is, how they were aimed to the development of Spain and to the public happiness of the population throughout a more rational management of the State resources.

In order to accomplish these objectives, the next Section develops a theoretical framework for the use of institutional analysis in the examination of accounting change. Section Three describes the organizational field in which accounting practices emerged. Paragraph Four presents six cases studied. Then, in Chapter Fifth, is discussed the accounting practices in the light of the normative pressure defined by the institutional analysis and finally, Section Sixth, the conclusions are presented.

## 2. INSTITUTIONAL SOCIOLOGY AND ACCOUNTING CHANGE

Institutional Sociology has been used to explain accounting change. Carmona *et al.* (1998) analyzed the changes in cost accounting practices at the Royal Tobacco Factory for the period 1760-1790. They used this frame to understand the context within which new and more sophisticated accounting practices emerged. They concluded that the emergence of accounting practices could not be seen as the natural response to specific shifts in the nature of control. In the case examined, which was a monopoly, the evolution of accounting responded to the necessity of enhancing the external legitimacy of the organization to face the new government policies. Núñez (1999, 2002a, 2002b) studied the effects of institutionalized environments on the organizational structure in the Gunpowder Monopoly in New Spain, present Mexico, from 1757 to 1787 and the role of accounting in that process. Those effects came to a process of bureaucratization through which rationality was implemented in the organization. Institutional Sociology was used to analyze accounting from a multidimensional perspective: as part of the organizational structure and as an environmental element supplier of rationality.

In a similar vein, Carmona and Macias (2001) examined the design and implementation of budgeting and costing systems in the Spanish Tobacco Company during the period 1820-87, using the regulative approach defined by the Institutional Theory. They concluded that conformity of accounting practices to institutional pressures was contingent on the intensity of demands, the effect on organizational goals and the stability of the environment.

Emphasizing the importance of broader cultural patterns to shape organizations is a distinctive feature of sociological approach in Institutional Theory (Meyer and Rowan, 1977). Organizations find themselves immersed in a certain cultural and historical context, which is portrayed by the existence of systems of shared beliefs, symbols<sup>1</sup> and regulation requirements (Scott and Meyer, 1985; and Meyer and Scott, 1985). In

essence, the New Institutionalism in Sociology is a reaction against the behavioral interpretation of collective actions as the aggregate consequence of individual choice. Moreover, it is based on “*skepticism towards atomistic accounts of social processes and a common conviction that institutional arrangements and social processes matter*” (DiMaggio and Powell, 1991, p. 2).

Therefore Institutional stability is reached through the conformity between the micro level and the macro level. In other terms, legitimacy is a condition for the organizational stability in an organizational field. Scott (1995, p. 45) defines legitimacy as “*a condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws*”. And he argues that this legitimacy is based on three pillars –regulative, normative and cognitive–, that are stressed differently by the different institutional approaches.

DiMaggio and Powell (1983) contend that institutionalization process brings about a homogenization of organizations (i.e. isomorphism). This process of homogenization of their organizational structures is the answer of the organizations to environmental expectations, to guarantee their survival and increase their success possibilities in an institutionalized environment. Institutional isomorphism is explained through three different mechanisms –coercive, normative and mimetic–, associated to the three Scott’s (2001) pillars.

The regulative pillar of institutions –based on rule setting, monitoring, recompense and punishment– corresponds with the coercive isomorphic mechanism. Coercive isomorphism arises when environmental strengths pushing to organizational change come from political influence or cultural expectative towards legitimization of the organization. In this case, the environment acts over the organizational structure through the imposition of such structure (DiMaggio and Powell, 1983; Scott, 1987).

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<sup>1</sup> Perceptible units that, in the frame of a culture, have a uniform sense perceived, for at least, a group of people. Individuals are constructors of symbols. The culture is, in part, a complex system of uncountable symbols (Schoeck, 1985).

The normative pillar reposes on values and norms that could be applicable whether to all members of the collectivity or to specific actors, in which case those values and norms are termed roles (Scott, 2001). For a better understanding of the difference between the regulative and the normative pillars, the logic of both, instrumentalism and appropriateness should be distinguished (March and Olsen, 1989). While self-interest is compatible with a regulative conception of institutions, a normative conception leads to think that individuals act routinely following coded expectations related with their roles in organizations. This does not mean that they are slaves to social conventions, but attentive people who adapt to organizational rules. DiMaggio and Powell (1983) argue that normative isomorphism is reached through professionalization, formal education and professional networks. However, this configuration is not made on coercion or imposition basis, but through authority as legitimated power (Scott, 1987).

Finally, institutions are founded on a cognitive dimension. Sociology has long acknowledged the importance of symbols and meanings in social action. That is, symbols, meanings and rules are social constructions that are created, sustained and changed by social interaction (Berger and Luckman, 1966). According to Scott (2001), the change introduced in Neo-Institutional Theory is the treatment of symbolic systems and cultural rules as objective and external to individuals.

Nevertheless, the social construction of roles and organizations varies over time and space and contributes to stability through compliance because other type of behavior is inconceivable (Scott, 1995). In the organizational field the firms imitate (mimetic process) those firms that seems to be more successful and legitimate (Tolbert and Zucker, 1983). According to the theory of practical action, individuals do not act rationally, but according to routines (DiMaggio and Powell, 1991).

On the other hand Meyer and Rowan (1977) argue that the formal structures of many organizations reflect the myths of their institutional environments and are more likely to emerge in more modern societies. The consequences of institutional isomorphism are threefold. First, organizations incorporate elements that are legitimate rather than efficient. Second, they employ external or ceremonial assessment criteria. Finally, organizations become dependent but stable.

Several strategies can be devised to resolve conflicts between ceremonial rules and efficiency (Meyer and Rowan, 1977). First, decoupling elements of structure from activities when attempts to control and coordinate activities lead to conflict and loss of legitimacy. Second, conflict can be resolved through confidence (avoidance, discretion and overlooking). Finally, conducting ceremonial inspection and evaluation, as close surveillance undermines legitimacy.

The regulative pillar has been useful to explain homogeneity in structural forms caused by coercive pressures exerted by powerful environmental agents, such as the state organization. Throughout the eighteenth century, the Spanish State appeared as a social dominant actor with the ability to impose or encourage certain organizational designs, through specific regulative processes (rules setting, monitoring their observance and sanctioning non-conformity).

The institutional analysis of accounting change in the eighteenth century has focused on the regulative pillar of institutionalization, rather than on the normative or cognitive pillars (Álvarez *et al.*, 2002). Conversely, Institutional Sociology in organizational theory has focused in the cognitive elements of institutions, although providing a limited picture of a phenomenon (Mizuchi and Fein, 1999). Thus, even though recognizing the value of regulative explanations of accounting change, we think that there is value in extending the explanation to normative elements of institutions.



Particularly, the six cases chosen in this study highlight the importance of four relatively neglected but important issues. First, Institutional Sociology has been lately criticized because of the lack of attention paid to the role of individuals in the processes of institutionalization (Powell, 1991; Dacin, 1997). Second, the political and ideological Enlightenment movement provides a normative framework that explains a new role of accounting in the emerging organizations. Third, extending the normative explanation, we have study the role of a group of enlightened managers, involved in improving the efficiency of their organization, as a medium of development of their country and, as a last resort, of the promotion of the general happiness of its population. This explanation appears to be interesting for the configuration of cost accounting system and it had not been hypothesized in previous research on accounting history. Finally, while previous research on accounting has focused on longitudinal single case studies, this research draws on evidences found in six cases, some of them, previously examined in the literature, with the common feature that they are inscribed in the same organizational field: the Spanish state administration.

### **3. THE ORGANIZATIONAL FIELD: THE SPANISH STATE ADMINISTRATION**

This section describes the orchestration of institutions, organizations, individuals and events that give rise to what is conceived as an Institutional Field. DiMaggio and Powell (1983. p. 148) define an Institutional Field as *“those organizations that in the aggregate, constitute a recognized area of institutional life”*. We would contend that the companies, factories and monopolies that belonged to the Crown or benefited from the Royal support integrated an Institutional Field. They had a privileged relationship with the Crown, and more important, these companies shared values and managers as will be explained below.

At the beginning of the 18<sup>th</sup> Century, when Charles II, the last Hapsburg monarch died, a new dynasty came, the French Bourbons. The dynastic change is associated with innovations in social and economical politics inspired in the French Enlightened Model and which generated reforms that spread to Hispanic dominions overseas. In

the first half of the eighteenth century there were established the basis from which the most ambitious reforms were to be undertaken from 1760 onwards. The dynastic change made the diffusion of the Enlightenment possible. It gave rise to a new regulation framework led by principles of rationality as a mean for searching the development of the country and the public happiness of its inhabitants (Sarrailh, 1992).

Reforms, characteristic of Enlightened Despotism, common through Spanish politics in the second half of the eighteenth century, were based on the wish to develop production and commerce, to shape a solid national economy and protect it against foreign competition. This plan came to fruition through the establishment of a rigid centralism and the effort to unify the political structure of the medieval kingdom of the Spanish territory in order to create together a new nation (Céspedes, 1983). To centralize was to modernize, that is, getting effectiveness for the good guidance and aimed to the general happiness of individuals. But standardization was necessary for centralization. In this sense, administrative reforms were undertaken as starting point for other economical and political reforms.

Centralized and rationalist trends were noticed from the beginning of the century. For instance, the administrative reorganization through New Plant Decrees, in order to homogenize the political organization of the kingdom, repeals old privileges of historical kingdoms in the Spanish territory, such as those from Aragon, Catalonia, Valencia and Majorca (Anes, 1994). That way, the absolute monarch concentrated into his hands as much power as possible.

Administrative reforms continued with the installation of the Intendances Régime inspired by the French model. The aim of this measure was to abolish the old institutions inherited from the Hapsburgs and overcome their administrative deficiencies, which also caused losses in tax revenues to the Crown. The direct representatives of the royal government, the intendants, set up as the main agents in

the reconstruction and economic development of the kingdom, since they had power over the treasury, justice, government and war (Navarro, 1995).

The ordinances created for the Intendances Régime specified that intendants were to report to the king on *"the state of every province in products and crops, their abundance or sterility"* (Anes, 1994, p. 364). These information requirements show the extent to which public intervention in private matters started to be organized.

The administrative reform acted as starting point for economic and political reforms. Different actions were undertaken aimed at strengthening the Army and weakening the Catholic Church. Most intendants came from the military and they concentrated on military, economic and government functions. On the other hand, the Catholic Church became a state inside the State during the Hapsburgs' reign. Bourbonic politics decreased its power as an essential way to make the monarch political power stronger (Fernández, 1994).

To reinforce and modernize the State, the revenue problem of the Royal Treasury had to be solved. The solution was increasing the public revenue through the improvement of collection, trying not to create new taxes (General Archive of the Indies, AGI, Mexico, 1249). The new administrative organization made it possible, thanks to the separation of administrative revenue functions (in the charge of the provinces intendants) from auditing functions (in the charge of the accountants) in 1745 (Artola, 1982, p. 254). That way an administrative system capable of reaching every kingdom point was created guided by a set of trained and competent public officials at the king's direct service.

The existence of the new service corps allowed the creation of a new administrative structure in the Royal Treasury called *Nueva Planta* (Treasury New Plant) (AGI, Mexico 1250). It consisted of the change in the administration of the Crown revenue sources, from the renting system (typical of Hapsburg reign) to the direct

management system (part of Bourbonic centralism). This measure increased the public income through improvements in revenue management, only possible because they were directly controlled (Núñez, 2002b).

Enlightened governments followed an economic promotion program, a sort of enlightened or evolved mercantilism. It was based on the reformulation of the colonial pact to favor of metropolis industry and trade. It was necessary the creation of a more frequent and competitive trade, in price and quality, together with bigger customs revenues, to decrease foreign competition and keep the monopolist to advantage Spanish commercial groups (Eugenio, 1988). The aim was the creation of a favorable balance of payments: that is, to sell rather than to buy. But the state of the Spanish manufactures did not facilitate this policy. That is why the Colbertist protectionism was the most widespread doctrine. Nevertheless, as Spain was an essentially agricultural country, some enlightened rulers followed Physiocratical policy. That was the case of Mr. Pedro Rodríguez de Campomanes, Attorney-General in the Council of Castile. He belonged to an elitist group that facilitated changes in Spanish institutions. He gave rise to the suppression of the grains tax and the settlement of the grains free trade in the kingdom in 1765 (Anes, 1994). He supported, as well Mr. José de Gálvez, proceedings aimed at the modification of the Treasury Plant in the Viceroyalty of New Spain (AGI, Mexico 1250).

The reign of Charles III (1759-1788) coincided with the full Enlightenment phase, when the figures of the intellectual and the political man joined. The Enlightenment used two instruments to achieve its goals: the education of the population and the Economic Societies of the Country's Friends (*Sociedades Económicas de Amigos del País*).

These Societies were one of the most representative instruments of the official Enlightenment in Spain. The first one was founded in the Basque Provinces. Its success in the economic foster pushed Mr. Campomanes to promote them from the Council of Castile so that, from 1774 to 1804 more than fifty societies were founded

throughout Spain. Public authorities aiming at the country progress supported private enterprise that way. This Society tried to overcome educational deficiencies. Their mission was to know about the economic and social situation of their territory, to give professional training to peasants and artisans and to project and to sponsor regional or national economic reforms. They were joint enterprises between particulars and the State where a part of the educated and leading class put at the official reforms program's service (Anes, 1994; Fernández, 1994).

These societies joined enlightenment people with the objective of discussing and diffusing technical improvements and scientific advances aimed to the development of the country and, in the last resort, to the public happiness. Usually these societies had three commissions. The first one study issues with regards the agriculture; the second one with regard mechanical tools and craftworks; and the third one occupied of industry, commerce and navigation. Annually, these societies gave awards with the objective of giving incentive to technological and scientific improvements (Álvarez-Dardet *et al.*, 2003).

Education offered the possibility of carrying out significant reforms avoiding social traumas. The expulsion of Jesuits, by a decree signed by Charles III on February 27<sup>th</sup> 1767, pushed the government into the intervention in educational matters, as they had kept a preponderant role in the advanced education. Thus, the enlightenment Pablo de Olavide drew up a Plan for the reform of the University of Seville where he claimed the secularization of teachers, the bringing up to date of the subjects, a pedagogical renewal with the establishment of the text-book and State control. This Plan inspired others, such as the one of the Osuna University analyzed below (López-Manjón, 2004).

Moreover, non-university centers for higher education were promoted from the Administration, such as the Royal Nobility's Seminar of Madrid; the Royal Study of *San Isidro*; the School of Mineralogy of Madrid; the Asturian Institute of Mines and

the Royal Study of Machines. The creation of skilled labor was encouraged with these measures (Fernández, 1994).

#### **4. CASES STUDIED**

Once analyzed the Institutional Field, now we are going to present the evidences found in the six cases studied for this research. All of them had in common that although they were separate organizations and dealt with different activities, in all of them there were singular enlightened individuals, with a high sense of the responsibility, that trying to manage their organizations with efficiency and with the objectives of the development of Spain and, in the last resort, the arising the general happiness of the population.

##### **4.1. ROYAL TOBACCO FACTORY OF SEVILLE (SPAIN)**

The Royal Tobacco Factory of Seville has been studied in detail for the second half of the 18th century: from a historic perspective by Oliver (1987), Rodríguez (1990, 1992, 1993, and 1994) and Morales (1991) and from a management and accounting perspective by Gutiérrez (1993 and 1999), Carmona, *et al.* (1997, 1998 and 2002), Romero (1997), Gutiérrez and Romero (2001, 2005 and 2007) and Álvarez *et al.* (2002).

A few years latter of the discovered of America the tobacco came to Europe through the Seville harbor. Therefore this city was the first European one were the tobacco was elaborate. In 1636 the Tobacco Monopoly was established in Spain. Thus, almost from the beginning, the production and sales of tobacco were not free for private individuals. This was because the Finance Ministry soon recognized that it could get significant resources from taxing tobacco, even though this meant the appearance of a parallel black market (Rodríguez, 1994).

Since 1701, the administrative reforms of the new Bourbon dynasty supposed for the Tobacco Monopoly the creation of the Tobacco Agency in the beginning of the

1730s, located in Madrid and depending of to the Finance Ministry. The Tobacco Agency was a public institution that dealt with tobacco production, distribution and tax collection. The tobacco tax was one of the most important revenue sources for the Crown in the 18<sup>th</sup> century (Artola, 1982). This made that, the management of the Agency was closely followed by the Ministry of the Royal Treasury and even the King himself. The Agency comprised the import of raw material the manufacture and distribution of tobacco products in Spain and eventually abroad (Goodman, 1994, Comín, and Martín, 1999).

With regards the manufacturing, in the second half of the 18th century, the only factory authorized by the Tobacco Agency was located in a small building in the Seville downtown named *Fábrica de San Pedro* (Factory of San Pedro). As demand increased very quickly soon the Factory had the problem of the lack of space. Following Gutiérrez (1993) the demand increased from a little more than one thousand pound in 1700 to near of four thousand in 1737. That meant a rise of 271 per cent. This notable increase made that other houses, of the around of the first building, were rented or bought and used as workshops.

This enlargement caused an irregular outline in the internal layout of the Factory, making difficult the production process and its internal control. In these premises, the managers of the Factory were only able to carry out the production programs and usually launching products to the market with a great hurry. That made that the quality were had not in mind and that often the finished products were full of defects (Rodríguez, 1994).

The permanent production problems in the Old Factory caused by the lack of space gave place to a New Factory (*La Nueva Fábrica*) outside the city walls, planed and built by the Tobacco Agency and finished completely in 1770. The design of the New Factory was aimed at fulfilling the demand for the tobacco at that time. It was a regular building formed by a network of columns and vaults. This made possible to gather workers in different departments with no possibilities of moving among them,

facilitating their control and avoiding smuggling and inefficiencies (Carmona *et al.*, 2002).

The Tobacco Agency enacted regulations (*Instrucciones*) to standardize the production process, the internal organization of the Factory, and to assign responsibilities of the different posts (Romero, 1997). The production process in the Factory of San Pedro was regulated by an Instruction given in 1744. This Instruction treated the specific problems of the production process, such as night shift or quality of the products, and was aimed to improve the installation efficiency (Romero, 1997 and Álvarez, *et al.*, 2002).

On the other hand, there were Instructions for the New Factory in the years 1761, 1779 and 1790. The 1761 Instruction, signed by the enlightened Treasury Minister, Mr. Esquilache, specified the new production process, detailing responsibilities and introducing, the best know-how for the tobacco (Álvarez, *et al.*, 2002) and a new accounting process (Carmona, *et al.*, 2002). The new accounting process meant a significant rise in the number of accounting books and statements, rising from 33 to 60; and a sophisticated flow of information inside the Factory and between the Factory and the Tobacco Agency (Madrid). This sophisticated accounting system gave place to the improvement in the control system as it allowed the control of the products, workers and materials throughout the production process (Carmona *et al.*, 1998 and 2002).

With the New Factory it was possible to improve other aspects of the management as the operational time (Gutiérrez and Romero, 2001) and the quality of the finished products (Álvarez *et al.*, 2002, Gutiérrez and Romero, 2007). Oddly, two outstanding figures of the Spanish enlightened movement, during the decade of 1770, Mr. Carrasco and Mr. Jovellanos, were named to manage the New Factory. Both of them had permanent communication with the Treasury Minister and eventually with the king himself. Besides, they were founders of the Economic Society of the Country's Friends of Seville in 1775 (Álvarez-Dardet *et al.*, 2003).



#### **4.2. GUNPOWDER MONOPOLY IN NEW SPAIN (NOW MEXICO)**

This case studied by Núñez (1999) shows how Mr. José de Gálvez made the change in Gunpowder Monopoly management system, from the renting system to direct state management in 1766 in New Spain. When Gálvez was designated as General Inspector of Treasury and Law in the Viceroyalty of New Spain, he was given a confidential instruction on March 14, 1765 which emphasized maximizing the Crown revenues, trying to avoid the creation of new taxes, and securing the payment of legitimate taxes (AGI, Mexico 1249). He had to undertake quick economic reforms based on the modification of collection methods: changing the renting system into a Royal Treasury Monopoly management, by using highly trained and competent civil servants.

The change in the gunpowder management system, as the tobacco one, was part of a Spanish general policy aimed to incorporate the different monopolies of the Treasury in New Spain into the direct state control, to get more revenues for the Crown. However, problems due to the shortage of, bad quality and high prices of the gunpowder produced by the tenants during a military restructuring process forced direct state intervention, with more strategic-military than fiscal objectives at the beginning.

The Gunpowder Monopoly went to the Crown's management the first of October 1766, under the headship of Lieutenant Colonel Mr. Nicolás Devis. Taking charge of the gunpowder production, the Crown not only tried to supply the army but also to be able to consume and supply it to the public (specially the miners) at lower prices than in the renting period and better quality than gunpowder offered in the black market (AGI, Mexico 1249).

Once the state management régime in the Gunpowder Monopoly was established, the organizational structure rules and procedures were brought together in the

Instruction and in the Ordinances prepared by Mr. José de Gálvez on September 15, 1766. Gálvez's Ordinances consisted of 57 articles regulating in detail every aspect regarding to the organizational structure of the gunpowder monopoly (AGI, Mexico 2216). The profits in this Monopoly increased threefold over a decade from the renting system to the direct management system.

#### **4.3. ZACATECAS MINING INDUSTRY IN NEW SPAIN (NOW MEXICO)**

Gutiérrez and Núñez (2000) described the technological and organizational renovation of Zacatecas' mines in the 1770's aimed to increase silver production to be sent to Spain to cover the permanent Spanish deficit. Such mines had had a very important activity during the 1720's decade, but in the last quarter of the eighteenth century they were flooded and abandoned. The fact that the superficial veins were used up forced its abandonment, faced with the necessity of intensive capital investments.

Two outstanding figures can be identified in a process of change managed at the end of the 18<sup>th</sup> century: the enlightener Mr. José de Gálvez and Mr. José de Laborda. Mr. Laborda was a miner businessman who tried to get tax-free exploitation of the mines from the Spanish Crown in order to regenerate the area. It is worth mentioning how he explained to higher instances the necessity of reaching the break-even point in the mining activity and the analysis of technological as well as organizational measures aimed to reach that point.

At the same time, the General Inspector, Mr. Gálvez, fostered the mining activity in three different ways: (i) he supported the free trade, since this measure gave rise to the transfer of capital from the commerce to the silver-mining activity; (ii) he organized miners in a guild, with its own jurisdiction and courts, raising their social position that way; and (iii) he granted miners with tax exemptions until they had recouped their investments (AGI, Mexico 2235, 2236, 2240). All of these measures

meant the introduction of a sophisticated accounting system and a close follows up of the accounting figures.

#### **4.4. TINTO RIVERS MINES (HUELVA, SPAIN)**

Although these mines were already known in the Roman period, Flores (1983) has studied the actions taken by the Spanish Government from 1725 with the objective of improving the Spanish mining activity. These actions meant to manage the mines under the renting system and its further direct management system by the Treasury from 1783. As we have seen in the previous cases, the Crown sought increases in State revenues. For this reason, when King Charles III wanted to encourage the Spanish industry, one of the measures taken was the fostering of the Tinto Rivers Mines, as its copper production was important for the Spanish economy.

In February 1, 1783 the change in the mines management system took place towards a direct administration régime, in order to control the mines production by the Treasury Ministry. Mr. Melchor Jiménez was chosen by the king to manage the Mines. Mr. Jiménez was Chemistry, Professor and had been trained in Germany, where he acquired the most advanced technological knowledge of the time.

His management was decisive for the improvement of the Mines. Thus, the 1780's was a positive period of change for Tinto Rivers Mines. New mines and new copper smelting plants were opened in the area. In this sense, it was significant that annual production almost doubled between 1783 and 1785, increasing from 83 to 156 metric tons. It was established a procedure by which he top management, together with the skilled staff met once a week to discuss every matter related to the production process. These meeting implied to create and to follow up the accounting statements of the period.

Besides, it is remarkable that the director of the Mines was founder of the Economic Society of the Friends of the Country of Seville as the superintendent and the

consultant of the Tobacco Factory, Mr. Carrasco and Mr. Jovellanos (Álvarez-Dardet *et al.*, 2003). This fact proves their affinity with the Spanish Enlightenment Movement.

#### **4.5. ROYAL TEXTILE FACTORIES**

The authorities followed the Colbertist *manufactures réunies* system, bringing together all the phases of the production process (Anes, 1994). The system was applied mainly to the textile industry. While the Crown founded some of these industries, some others were established by private enterprises with some kind of royal support. All these factories received the name of Royal Factories. These factories had two main mandates with the objective of improving the Spanish balance of payment. First, they had to act as technical institutions, diffusing knowledge and skills. Second, they were to provide Spain with fine cloths and reduce imports from other European countries.

In general, large factories seemed necessary in order to overcome the lack of skilled workers and technology. Thus, the Guadalajara Textile Factory's labor force reached 24,000 by 1791. The kings and the entrepreneurs fitted the Royal Factories with modern equipment and staffed them with foreign artisans (La Force, 1965).

Prieto and Larrinaga (2001) studied the Royal Textile Factory of Ezcaray and concluded that there existed a sophisticated knowledge of cost accounting, which was used, together with financial accounting, to raise incomes from the Crown and from the customers. Sophisticated cost studies were used to show the profitability of the Factory and the competence of the administrators.

#### **4.6. OSUNA UNIVERSITY (SEVILLE)**

López-Manjón (2004) has studied this case and has analyzed the evolution of accounting system and organizational structure in that University from 1549 to 1824. There was a change that attracted the author's attention: the administrative reform carried out in 1775 by Miguel Benito Ortega Cobo. This

Reform was a reaction to a wider Educational Reform planed by the Crown and carried out by the reformer of the University of Seville, Mr. Pablo de Olavide.

This Reform was aimed to eliminate many of the minor Spanish universities because they were considered as useless. The argument used was that they did not follow the general university curriculum imposed by the State. Besides, they were considered by the enlightener more as a speculative business than as an educational institution. The objectives of the State reform were two. On one hand, to give new curricula aimed to positive science and, on the other, to control the University funds throughout the control of the rector and the managers' behavior.

As a consequence of the Educational Reform, the author studied the modifications carried out by Fray Miguel Benito Ortega Cobo between 1771 and 1777 in the Osuna University. In the 1770 decade, the Crown had closed several minor universities, such as Avila, Irache and Osma Universities. In order to avoid the imminent closure of the Osuna University, managers had to attract new students to justify the universities' public usefulness. López-Manjón (2004) research focuses on the role of accounting in the survival of this organization. One measure aimed to avoiding the close down of the University was to motivate professor by raising their salaries and the establishment of more rational administrative procedures. This Reform meant more managers meeting; a close follows up of the budgets and the establishment of a more complex accounting system.

In order to summarize this section, the next table displays the six cases studied and their points of coincidence in relation to our analysis. We have indicated in the rows: the geographical areas of the cases studied; the agents that managed the changes; the years of the changes; its objectives; the kinds of the change; and finally the regulations that supported such changes.

	<b>Royal Tobacco Factory.</b>	<b>Gunpowder Monopoly.</b>	<b>Zacatecas Mining Industry.</b>	<b>Rio Tinto Mines.</b>	<b>Royal Textile Factories.</b>	<b>Osuna University.</b>
<b>Geographical Area.</b>	Seville, Spain.	New Spain.	New Spain.	Huelva, Spain.	Anywhere in Spain.	Osuna, Spain.
<b>Agents that managed the Changes.</b>	Esquilache, Carrasco & Jovellanos.	Gálvez.	Gálvez, Gamboa & Laborda.	Jiménez.	Charles III & Government.	Olavide & Benito Ortega.
<b>Year of the Changes.</b>	1761	1766	1761-1767	1783	1753-1787	1775
<b>Objectives of the Changes.</b>	To increase the State Revenues.	To increase the State Revenues.	Organizational Survival.	To increase the State Revenues.	Fine Clothes. Diffusing Knowledge.	Organizational Survival.
<b>Kind of Changes.</b>	Internal Organization.	Renting vs Direct System.	Internal Organization.	Renting vs Direct System.	Increase Production.	New Administrative Procedure.
<b>Regulation that Supports the Changes.</b>	1761	1766	1761-1768	1783	1767	1767-1777

## 5. DISCUSSION

Among other practices and procedures, modern accounting is often introduced in organizations with the purpose of increasing their legitimacy and their survival prospects (Ribeiro and Scapens, 2006). At this point Miller stated that *“One could study modern accounting as a ceremonial function that legitimates organizations with the mythical “users” of accounting information. (...) One could study the impact of particular forms of accounting on organizations as an institutional process rather*

*than being limited to asking questions of their presumed efficiency effects”* (1994. p. 10-11).

Carmona *et al.* (1997, 2002) cast doubt on the argument that costing was used with the aim of increasing efficiency. They thought that accounting evolution in the Tobacco Factory respond more to the look for the proper rationality of the Enlightened that due to market and competitive purposes. Carmona *et al.* (1998) and Carmona and Macías (2001) have demonstrated that powerful external constituencies had a great deal of influence in the design of the costing system.

In the same vein and according to Prieto and Larrinaga (2001), the costing practices were devised by accountants rather than by entrepreneurs. Gutiérrez *et al.* (2005) report that emerging knowledge and use of cost accounting in eighteenth century Spain was similar to the one of the British case and before the Spanish Industrial Revolution. However, these practices can not been adequately explained by traditional accounting historiography.

Therefore, the role of accounting in institutional processes is next analyzed, considering one of the three pressures defined by the Institutional Theory: the normative one. Although the regulative pressure has already been studied in several isolate cases, the normative elements are useful to studied different organizations with different activities but belonging to a specific organizational field. In this study, the organizations belong to the organizational field defined by the Spanish Enlightened State. From this frame, we will see that accounting was conformity with the general objective of the global efficiency of the State and the general happiness of the population. As we have seen in the cases studied, this objectives were carried out by a minor and well trained elite of individuals guided by the enlightened objectives (Sarrailh, 1992).

## 5.1 THE INSUFFICIENCY OF THE REGULATIVE ELEMENTS TO EXPLAIN THE ACCOUNTING CONFIGURATION

The institutional analysis of accounting change at present has been focused mainly on regulative elements. Thus, Carmona *et al.* (1998) contend that new accounting practices emerged in the Tobacco Factory of Seville as a response to the strong pressures of one powerful external force, i.e. the Government regulations. New accounting practices, more elaborate and more timely, emerged with the aim of enhancing the perceived level of performance and hence provide legitimacy to the organization.

In the cases studied here, the Crown was a powerful external constituent that intervenes in each company. Thus, from a regulative point of view, these organizations had a strong incentive to conform to higher level expectations. However, we will argue in the next section that this is not the only motivation for conformity.

From the regulative perspective, the role of accounting is to show the organization fulfills the expectations of the State machinery. In this respect, the coercive elements of accounting are evidenced by the fact that most cost accounting exercises were subject to a precise regulation. For example, the regulation for pricing cloth at the Royal Textile Factory of Ávila states explicitly how prices can be determined. Thus, it is said that *“to establish cost prices in the factory it will be necessary to add from the first raw material to the last work in the clothes. And this quantity will be risen by five per cent in plain and printed clothes, and ten per cent to the rest of fabrics in order to incorporate the manager and the administrator wages, deterioration of machines, tools and other expenses, and to produce some yields* (General Archive of Simancas, SSH, Bundle 756, 25/6/1794).

In the same vein, and with regards the Tobacco Factory, the Treasure Minister, Mr. Esquilache, gave detailed norms to govern the Factory, even including a norm dated on 1773 indicating with detail how the cost it must be calculate (Carmona *et al.*,



1997). Nevertheless, this pressure is not enough to understand the conformance of the emerged accounting system because it has considered neither the beliefs of the managers, nor their training and nor their intellectual associations.

## **5.2. THE MANAGERS' ROLE AND THE UTILITY OF THE NORMATIVE ELEMENTS TO EXPLAIN THE ACCOUNTING CONFIGURATION**

It should be emphasized at this moment that normative elements of institutions should be distinguished from regulative ones. For the later, the driving force is coercion or imposition. On the contrary, from the normative side, institutions emerge based on values, norms and the logic of appropriateness.

We contend that much of the literature on accounting change has neglected this normative aspect of institutionalization. While the imposition of accounting structures has proved to explain a great deal of accounting practices in the Tobacco Factory (Carmona *et al.*, 1998; Carmona and Macías, 2001), the consideration of normative elements of institutions provides a powerful a new insight into the development of cost accounting in Spain 18<sup>th</sup> century.

The normative pillar is based on the social obligation, the appropriateness and the moral government. The carriers of this pressure are the values, expectations, authority systems, and obedience to duty (Scott, 2001). In this respect, the enlightened ideology could help to explain the development, conformity and diffusion of cost accounting in the Spanish case. DiMaggio and Powell (1991) also argue that normative isomorphism is produced through professionalization, education and professional networks. These issues are discussed in turn.

In the second half of the eighteenth century, individual aspired, in the last resort, to the general happiness of the population (Sarrailh, 1992). This ideal made that they faced with optimism multiple barriers that until that time had been considered insurmountable. Thus, enlightened people tried to remove old prejudices and an

extended superstition that paralyzed the reforms. Therefore, and with a new perspective, start to measure Spanish underdevelopment and to preach solutions that would overcome this backwardness. Enlightenment was an interiorized system of values that guided politicians, civil servants and the main actors in the Institutional Field identified in the organizations previously presented.

In this context, the value of patriotism guided the Spanish Enlightenment. Rather than acting in a calculative manner, enlightened people acted to a great extent with logic of appropriateness, which it is intrinsic with a normative view of institutionalization. At this respects two main pillar of the Spanish Enlightenment were patriotism and education and training. Both of them supposed a social obligation for the enlightened managers in their respective organizations and meant to govern their organization on a new and altruistic moral perspective. This moral way of governing meant a general improve of the efficiency of the organization with the convention that this efficiency will rebound in the progress of the country and in the general happiness of the population.

### *5.2.1. Patriotism*

Sarrailh (1992) contends that a clever patriotism informed the reformers' intent. Rather that ignoring their country problems, they tried to study and remedy them. Therefore, they had in mind, the problems and the miseries of the people concerned them, since they pursued a better society in which the number of poor people could be reduced and they questioned themselves about the legitimacy of the nobility's privileges. At this respects, the enlightened Spanish writer Cadalso better expresses this value. *"It is not enough to be good for one-self and the others; it is necessary to be good for the whole country. Patriotism is one of the greatest enthusiasms to lead the man to make brave deeds and to keep the states"* (1983, p. 254-6).

But patriotism did not mean the isolation of Spain. On the contrary, the Spanish Enlightenment used to acknowledge the superiority of foreigners and foreign

countries in matters of science and commerce, especially drawing on ideas coming from France. Sarrailh (1992) argues the necessity of traveling with the aim of learning of the foreigners, because they applied positive science. Besides, many foreign books were translated into Spanish (e.g. Adam Smith) and circulate in the country (e.g. Diderot's Encyclopaedia); and most of the enlightened people read French books. Either for fashion or for utilitarian purposes, many Spaniards also went to France. Many of them went in order to contribute to the enlightenment enterprise and others went in order to improve techniques in their factories and workshops.

Sarrailh (1992) quotes the case of the industrialist of silk cloth Mr. Fox, who wanted to improve the quality of the products of his firm to make them comparable to foreign cloths. He simulated his own death and went to France and England where he worked in some factories. Eventually, he came back to Valencia some years later and applied what he learnt in his own factories. In the same vein, Mr. Gálvez started as a lawyer of the French Embassy in Spain. His closeness to the French circle made it possible his quick promotion in the Spanish policy. In the same sense, the Zacatecas and Rio Tinto mines had been promoted and improved by German engineers, who were the best trained of their time. Thus, for the enlightened people, patriotism meant to learn of the foreigners their positive science, education and training.

### *5.2.2. Positive Science, education and training*

The normative elements of institutions were also based on education and professional networks. Some evidences could explain how these organizations reached conformity with the macro-level and stability. In particular, education and professional networks are discussed below.

Education was seen as one of the solutions to the backwardness of Spain. Enlightened people fought against a scholasticism that was established in

universities since the Medium Age. In opposite, they pursued a technical and utilitarian culture based on positive sciences. *“We should work on positivist’s sciences, in order to avoid that people from foreign countries label us as ‘Barbarians’”* (Cadalso, 1983. p. 274). As we argued before, the Royal Factories were places of technical training, provided in many cases by foreign artisans. Also, some French girls came to the Tobacco Factory for training the Spanish ones in the production of rape, a French tobacco fashioned in Spain in the second half of the 18<sup>th</sup> century.

In the economic order, Physiocrat ideals clashed with Mercantilist principles. In many respects, enlightened economy of the period favored free trade and attacked ancient institutions that deterred agricultural and industrial development (e.g. *Nueva Planta* Treasury New Plant). Enlightened people campaigned against traditional guilds, as the privileges of the *Mesta* (powerful council integrated by sheep farmers who successfully avoided reforms of their medieval rights to use the land of farmers to feed their sheep) and the poor distribution of land. In some other respects, Spanish industry was protected through different means.

On the other hand, formal education could also lead to organizational design. There are several examples where education seems to have played a role in the standardization of organizations. First, the managers and entrepreneurs of several of the organization studied in foreign countries (e.g. Jovellanos, of the Tobacco Factory studied in France, like Olavide in the case of the Osuna University) or were foreigners (e.g. in the case of the Zacatecas and Rio Tinto Mines there were German engineers). Second, we should not underestimate the fact that these people shared the principles of Enlightenment, what meant that all of them shared cultural and political experiences. Finally, the Crown established new technical schools that probably had an important effect in the diffusion of commercial technical practices (e.g. Mining School of Asturias).

In the same vein, training was a key element for enlightenment Spaniards. Foreign workers were actively contracted by the Crown not only in order to develop their technical abilities in the Royal Factories, but also to teach these skills to the rest of the workforce. In this respect, the Crown paid for the learners' salaries in the Royal Textile Factory of San Fernando established by the French man Christophe Bertrand.

In this sense, several well trained individuals appeared to have been agents of change. Some examples were Pablo de Olavide in the Seville and Osuna University and Jovellanos in the Tobacco Factory of Seville. Other examples reflecting the reformer power of the State in the single organization were Gálvez in the Gunpowder Monopoly and in the Zacatecas Mining Industry cases.

In this respect, we would argue that the organizations examined recruited foreign workers partly because they imitated the model established by the Crown. In effect, Carlos III named to several foreigners for the position of ministers or other important positions of the government. For instance, the Italian Esquilache was the Spanish Treasury Minister and also gave the 1761 Instruction for the operating of the Tobacco Factory of Seville.

In this process of education, an important role was played by the Royal Economic Societies, which constituted a forum to extend the education of peasants, craftsman and businessman and promote economic development. They were also places where entrepreneurs, bureaucrats and politicians met and shared not only their enlightened principles but also their technical knowledge. In the cases studied, several members of board of directors of the Tobacco Factory, the superintendent of the *Río Tinto* Mines and the reformer of the Seville and Osuna universities were members of the Spanish Society of Friends of the Country of Seville in 1775 (Álvarez-Dardet *et al.*, 2003).

## 6. CONCLUSIONS

Therefore we could deduce from an analysis across the six cases studied four findings. First, the agents of the changes belong to the Spanish Enlightened Movement. Second, the change happened in the peak enlightened period that coincided with the Carlos III kingdom (1759-1788). Third, the agents supported their reforms on regulations. And finally, the reforms were aimed to increase the efficiency of their respective organizations.

Thus, we have seen the power of the normative pressure in those organizations belonged to the same institutional field: dependent organizations of the State. The appropriateness comes because a group of managers decided to govern their single organizations based on the same values of the Enlightenment. This ethical management meant to increase the efficiency of the organizations as a medium to develop the country and to increase the general happiness of the population. And finally, the improvement in the efficiency supposed, in around twenty years, the appearance in separate organizations of similar and sophisticated accounting systems.

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