

# Accounting and accountability practices in the *obraje* of San Ildefonso of Quito: an eighteenth century productive proto-capitalist model

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## Abstract

The eighteenth-century European enlightenment brought a new mercantilist discourse along with schemes of production that stimulated new technologies of management to optimize company performance, rendering workers and production phases remotely visible, controllable and accountable. This spread to the colonies, including Ecuador. This paper uses a governmentality framework to present a case study of the Hacienda of San Ildefonso in Quito (in present-day Ecuador) and its controlling institution, the *Temporalidades*. Within the Hacienda, an *obraje* (textile workshop) was established for textile manufacturing, principally of wool, replacing the previous putting-out system, where production was located in homes and artisan workshops. The *obraje* was based on division of labour (skilled and unskilled) involving vertical integration of the business in a proto-capitalist economic model forming part of the activities of the larger state-controlled economic conglomerate, the Hacienda. The integration of these different functions within the Hacienda required the adoption of new practices of accountability and accounting to obtain more accurate control of production flows and workers and facilitate control at a distance for the benefit of the Spanish crown. This paper contributes to the literature on accounting and accountability practices by examining the emergence of these new practices in a unique production system developed across all Spanish America from the beginnings of its colonization.

**Keywords:** Accounting and accountability; *obraje*; manufacture; Quito; Eighteenth century

## Introduction

This paper describes the transformations that occurred in the agricultural-manufacturing complex of the Hacienda of San Ildefonso in Quito, a region of the viceroyalty of New Granada<sup>1</sup>, during the transition from the administration of the Society of Jesus to the lay Administration of Temporalidades in the eighteenth century. In particular, the paper focuses on the organization and administration of the *obraje* functioning within the hacienda. Its aim is to identify how accounting was used as a tool of control at a distance. In doing so, it highlights that accounting was not exclusively a means for measuring flows, it is also a managerial technology for governing bodies. This paper makes two principal contributions to the literature. Firstly, it introduces a new dimension to accounting historiography by examining the emergence of accounting and accountability practices in a unique production system: the *obraje de tejer*, a form of textile mill developed across all Spanish

America from the beginnings of its colonization, which had the particularity of contemporaneously employing free and servile labour, laying the foundations for the definition of different forms of industrial capitalism, compared to those of Western Europe and North America. Secondly, it contributes to the literature on the use of accounting as a technology used for measurement and control, facilitating governance of distant actors.

The Enlightenment of the eighteenth century can be considered among the events that generated the most significant changes in Western society. The impact on political thought and the conception of society are still visible today. The Enlightenment questioned the conception and structure of the power of the *Ancien Regime* and the society on which it was based. Reformist ideas spread rapidly among European courts. The sovereign took on a new guise, no longer the symbol of absolute power deriving from divine grace, but a very human administrator, executor of the projects of transformation of the institutions, at the basis of Enlightenment thought. For this reason, reform took place, above all in the economic field. Economics became politics, that is the science of administration and, as such, with a wide range of action (Hyland, 2003). Actions in the economic field were primarily concerned with the definition and transformation of the market. The publication of Adam Smith's essay on the Wealth of Nations in 1776 is probably the most lucid synthesis of the importance of the market for a new society.

In particular, the transformations of the market concerned the removal of all those constraints that had characterized the feudal economy, with the aim of mobilizing wealth. The reformers highlighted the importance of private property, criticizing the models of collective and common ownership. Agriculture assumed a crucial role in the production of wealth and manufacturing. Increased demand led to reorganization based on new production models that went beyond the traditional artisan workshop. The transformation and modernization of the market developed from a national perspective with specific reference to the increase of internal wealth. This discourse developed along the lines of mercantilist politics, first inaugurated by Jean Baptiste Colbert in France during the reign of Louis XIV. The mercantilist discourse became the main theoretical reference of the economic reforms of many European countries which saw the key to increasing wealth through the protection of their internal markets, increasing exports and limiting imports of finished goods through a system of tariffs (Knights, 2010; Mikosch, 1990).

The Spanish Empire, like most European countries, was impacted by Enlightenment reformism. King Charles III – coming from Naples and ascending the Spanish throne on the death of his father Philip V in 1759 – was the main supporter of the modernization of the institutions and the market of the Iberian monarchy. The first actions of the new sovereign concerned the institutional reorganisation of the monarchy. Its structure dated back to the sixteenth century and had been

weighed down by the numerous administrative superstructures created over almost two centuries. Mirroring what had already been done in the Kingdom of Naples, its main purpose of the reorganisation was to make the administrative machine simpler and more direct. Above all, it was to ensure direct control of society and the territory by the sovereign without the intermediation of the nobility, which had been a typical feature in feudal society. The reformists viewed these changes as increasing national wealth by freeing economic forces from the numerous existing feudal constraints (Munck, 2000; Outram, 2013).

The same issues also applied to the Spanish colonies. For over a century, the administration of the vast overseas territories had been entrusted to the viceroys and a few local officials. They often centralized different functions, ranging from the administration of justice to the collection of taxes, while control by the capital was erratic and sporadic. According to the proponents of the reformist model, this lack of control had contributed to making the internal market in the colonies inefficient, and to weakening the larger and more lucrative market with the motherland. The system of commercial privileges that, from the beginning of the sixteenth century had harnessed trade between the colonies and Spain, was unsustainable from an economic perspective due to a combination of inefficient management and high transaction costs (Engstrand, 1985).

The modernization process of the Spanish Latin American viceroys went through two fundamental stages. First, the re-establishment of the administration based on the French model. In this way, the sovereign could be present and control the territory by means of officials who had jurisdiction over a specific geographical area and responded directly to the Viceroy.

The other fundamental step was the expulsion of the Society of Jesus, the Jesuits, from the territories of the Monarchy. This was one of the most sensational results of Enlightenment reformism and was mirrored across early modern Europe. The expulsion was a complex political operation, considered by many to be a victory for reason over superstition and over the power of the Catholic Church.

With the Franciscans and the Dominicans, the Jesuits had formed the backbone of the Spanish colonization of Central and South America. This ensured a widespread process of inclusion of local populations through evangelism. In the mid-eighteenth century, the Jesuits constituted a "global" religious order with numerous developed economic interests. The first European country to expel the Jesuits was Portugal in 1759, followed by France in 1764, and Spain in 1767. These events had a significant impact on the society and economy of the territories involved, since, with the expulsion of the Jesuits from the national territories, goods and properties belonging to the Jesuit Company were simultaneously confiscated.

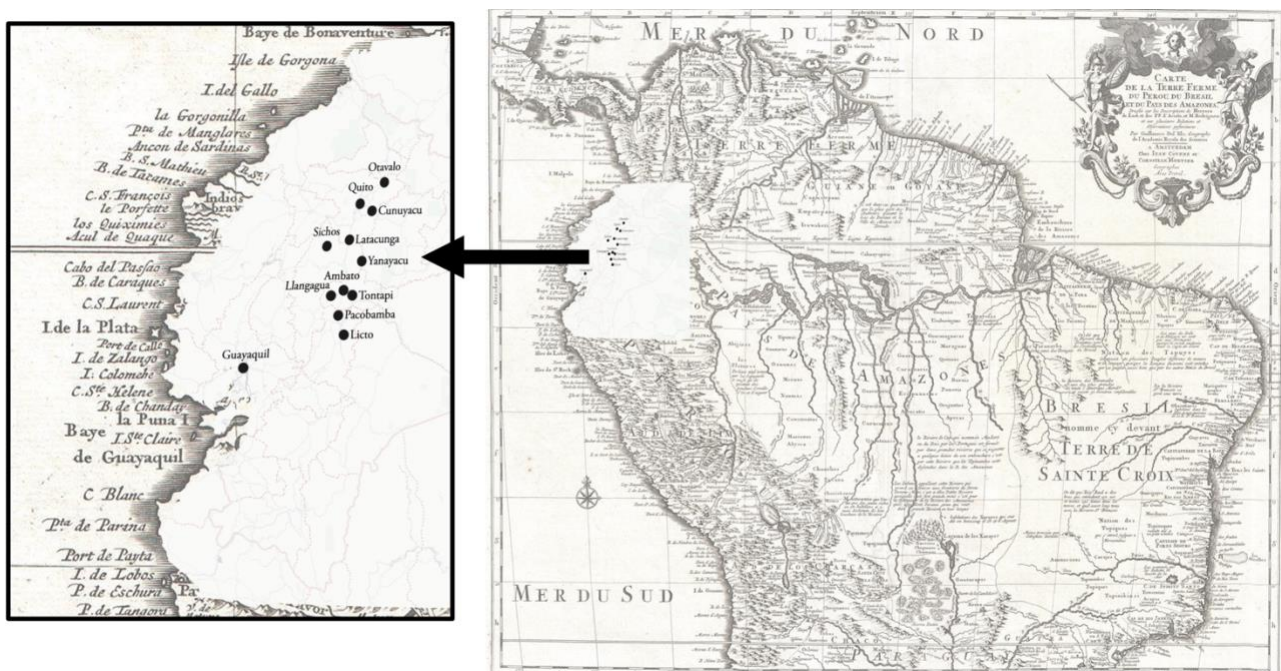
The operation was a real test for the reforming forces of the Enlightenment since the management of the seized assets involved the use of rational solutions aimed at the correct management of assets and the transparency of all administrative steps. The new technologies of government gave the monarchy the possibility of making people and flows visible and accountable within the huge economic system built by the Society of Jesus (Astigarraga, 2015).

In the American viceroyalties of the Spanish Empire, the management of property confiscated from the Jesuits was entrusted to specifically established administrations. In the Audiencia of Quito (the governing body that administered much of present-day Ecuador) the Administration of Temporalidades was established with the task of administering the enormous patrimony of the Jesuits.

The Hacienda of San Ildefonso was the name of the largest enterprise of the Jesuits within the Audiencia of Quito. It was a vast agricultural-manufacturing conglomerate in which agricultural production (wheat, legumes, potatoes, wood, wool) were associated with manufacturing, especially woolen textiles, employing skilled and unskilled workers, and slaves. The enterprises within the hacienda were located in various places in Ecuador, from the coast to the Andean region. The Jesuit organizational model was structured in such a way as to allow the provincial headquarters of the Hacienda in Quito to control, through its accounting system, all the activities carried out by the various production sites (Juanen, 1941).

Figure 1 shows the location and the main towns of Quito Province in New Granada. New Granada spread from the west coast of Quito province to the east coast of Guyana and to the north of Panama at the top-left of the main map.

Figure 1. Map of Quito Province



Source: Covens, J. & Mortier, C., Atlas nouveau, contenant toutes les parties su Monde, ou sont exactement remarquees les empires, monarchies, royaumes, etats, republicues, &c. Par Guillaume de l'Isle, c. 1830 edition.<sup>2</sup>

The paper is structured as follow: the theoretical framework is presented in the next section. The research methodology is then presented. The third section contextualizes the historical context of the case study and, following a macro to micro path, frames the case study within its geographical and social context. Evidence of the accounting system of the *obraje* are then explained and contextualized. Finally, the findings are presented and discussed, and limitations are recognised.

## **Theoretical Framework**

Since the mid-1980s, Foucauldian analysis has inspired many accounting studies, beginning with the pioneering works of Burchell et al. (1985), Hoskin and Macve (1986) and Loft (1986). Since then, the adoption of sociological categories of governmentality, control, and discipline has been widely adopted across more specialised fields of accounting, including accounting history (Stewart, 1992; Armstrong, 1994; Carmona et al., 1997, 2002). In particular, Foucault's 1991 governmentality framework has been adopted by accounting historians as the most versatile tool in order to analyse both the private and the public sector (Miller, 1990; Miller and Rose, 1990; Rose, 1991; Miller and O'Leary, 1994; Jeacle and Walsh, 2002; Neu et al., 2006; Sargiacomo, 2008).

Michel Foucault's term, "governmentality" refers to peculiar attitudes, arts and rules of government and administration that began to emerge in Europe in the sixteenth century (Dean, 1999; Sargiacomo, 2009). In this sense, governmentality can be defined as a form of activity or a sum of activities to control and conduct a group. This definition can be usefully applied to several different groups, including nations, armies, and social groups (Foucault, 1982). After the seventeenth century, a new governmental rationality became widespread, devoted to knowing and governing wealth, health, and happiness of individuals, groups, and whole populations (Rose and Miller, 1992; Lazzini and Nicolliello, 2020). Governmentality became the tool used to secure and improve economic performances in a society with a resultant increasingly economic rationality (Burchell, 1993). According to Rose and Miller (1992), governmentality could be interpreted as a set of political rationalities that consist of a precise definition of ends and means of government as well as the detailed description of tasks between authorities. Government and governmentality are mainly based on "technologies": the means, tools, and mechanisms put in place to know and control a group of people, workers, etc. (Burchell, 1991; Macintosh and Quattrone, 2010). Using such technologies is central to the government-control activity because it is a domain of cognition and calculation (Rose and Miller, 1992).

Another pivotal element of the concept of governmentality, often applied in studies of accounting history, is its link with disciplinary power exercised at a distance. This concept explains the use of accounting as knowledge/government tool. Just as populations and ethnic minorities can be monitored and governed indirectly by centres of calculation, so can the workers of a manufacturer (Miller and Rose, 1990; Robson, 1991). Institutions, including factories, prisons, hospitals, asylums, etc., could be reorganized through this process in terms of space and time with a focus on the behaviours of individuals and groups (Miller and Rose, 2008; Sargiacomo and Gomes, 2011).

Most recent governmentality studies in this literature have consequently presented a new perspective on the use of accounting systems. Research has shifted from consideration of accounting as an instrument for information and data collection to determine managerial decisions, to a multi-purpose instrument, adaptable to differentiated control needs (Ezzamel and Bourne, 1990; Hopwood, 1987; Bowden and Stevenson-Clarke, 2020). In this sense, following the outline provided by the studies of Michel Foucault (1979, 1980), the accounting history literature has deepened the relationship between knowledge and power, highlighting the role exercised by accounting as a tool to “know” (Ezzamel, 1994; Hoskin and Macve, 1986; Miller and O’Leary, 1987; Heizmann and Olsson, 2015; Maran, Bracci and Funnell, 2016). Thus, the concept of time and space has become an essential element for exercising knowledge (Carmona, Ezzamel and Gutierrez, 1997; Tyson, Fleischman and Oldroyd, 2004).

Space and accounting are interrelated at different levels (Carmona, Ezzamel and Gutierrez, 2002; Quattrone and Hopper, 2005): (1) Accounting can provide information on the use of space and time (production phases); (2) Accounting can be used to re-evaluate existing space and functions; and, (3) Accounting can be used to create new space and functions through the repartitioning of the same and therefore through its measurability, which is also accounting measurability (Miller and O’Leary, 1993, 1994). The accounting system can thus be organised to enforce quantification and valuation of activities, developed in, for example, a factory in differentiated physical and non-physical spaces (production phases). The organization, based on time and space co-ordinating and overseeing the work of labourers, enables control from a distance; while tighter control can be achieved by assigning a single worker, or workgroups, to a specific space. As noted by Foucault (1979), the differentiation and separation of spaces facilitates the supervision of workers or inmates. A factory is an ideal location of separation: an inside world (the factory) versus an outside world, useful to enforce the control on workers (Tyson and Oldroyd, 2019).

This paper contributes to the existing literature by examining the emergence of accounting and accountability practices in a unique production system: the *obraje de tejer*, a form of textile mill developed across all Spanish America from the beginnings of its colonization. The focus is on a case

study of the *obraje* of San Ildefonso<sup>3</sup>, a town in the Quito province of present-day Ecuador – at that time, part of the vice-royalty of New Granada. First established in the sixteenth century and still functioning in the eighteenth century, it presents a very particular case. During the eighteenth century, the *obraje* – a former property of the Jesuits – passed to the control of the State, resulting in changes being made to the existing accounting and control system due to a new necessity for “control at a distance”.

The concept of action at a distance derives from the studies of Latour (1987, 1988) based on the domination of events, places and people distant from a centre. Accounting presents the means to represent and to know a distant world and to be able to act, making registration, graphs, statistics, diagrams, etc. indispensable tools to transform what is abstract into action (Silva, Rodriguez, and Sangster, 2018).

This study analyses the combination of accounting and non-accounting techniques enforced by the *Administration of Temporalidades* (the state agency responsible for the management of former Jesuit properties). In doing so, it applies governmentality analysis to the eighteenth century in a phase of deep transformation of the concept of state and government driven by the pressure of “enlightenment”. The case study shows how the accounting system can explain the interaction between the accounting control system and the State (by the Administration of *Temporalidades*) and how such a system facilitated the control of events and individuals that acted far from the centre (Espejo et al., 2002; Sanchez-Matamoros et al. 2005). Furthermore, it represents a non-Anglo-Saxon and non-European case based on original archival sources that provides evidence of a different model of production that could lead to consideration of a different form of capitalism to those typical of this literature.

## **Research methodology**

This study seeks to answer the research question: How were accounting and accountability applied in the management of a proto-capitalist and very peculiar enterprise: the *obraje*? The archival approach adopted involved collecting data that was interpreted through the theoretical lens of Foucault’s *governmentality*, and reconstructing the social and historical context of the case study.

The research is mainly based on documentation kept at the *Archivo Nacional del Ecuador* (Ecuador National Archive) in Quito, where a complete section is devoted to *obraje* material. The documents cover almost the whole history of this manufacturing model from the beginning of the colonization by Spaniards in the mid-sixteenth century. We were able to identify judicial documents produced by local justice courts, and business documents produced by the different enterprises operating in the area. The Ecuadorian documents have been integrated with others held in the *Archivo*

*General de Indias* (General Archive of Indies) in Seville. These latter documents consist of reports sent from the colonies to the King, and the deeds adopted. The aim of considering different archival materials was to achieve a dual perspective on the management of *obraje*, from the centre and from the “periphery”, and so avoid possible bias in the sources. The archival sources used in this study are listed in Table 1.

Table 1. Archival sources used in this study

Archive Name	Collection	Item identification	Year
Archivo Nacional de Ecuador (Quito)	Corte Suprema (obraje)	Caja 8	1666
		Caja 19	1747
		Caja 22	1766
		Caja 24	1777
		Caja 30	1787
		Caja 32	1794
Archivo General de Indias (Seville)	Audiencia de Quito	Volume 5	1684
		Volume 128	1711
		Volume 133	1737
		Volume 209	1632

An interpretative approach is adopted in this study about accounting practices within the *obraje* of San Ildefonso in Quito province and within the Administration of *Temporalidades*. This approach is based on the description, analysis and interpretation of the data and events studied (Carnegie and Napier, 1996; Napier, 2001; Parker, 2004; Miley and Read, 2017). The study endeavoured to emphasise the role of ideology – consisting of a set of institutions and practices – historically and socially positioning the analysis within a specific context in which the subject of the research resides.

## Historical context

From the beginning of Spanish colonisation of South America, it was recognised that some essential commodities would need to be produced locally if colonisation were to succeed. In particular, there was a strong desire to increase and improve the agricultural productivity of the colonies by stimulating the production of textile plants such as cotton and sheep breeding for production of wool. The *obraje*, as a production unit, was a logical outcome of this situation. It had as its goal the production of low quality, affordable textiles for many consumers who could not obtain imported products, for which self-production was the only alternative. Due to the abundance of a native workforce, manpower was a determinant and decisive factor in the diffusion and development of the *obraje* (Ortiz de la Tabla, 1977); and the success of this form of manufacturing was strengthened by demographic changes in the Spanish American colonies during the sixteenth and seventeenth centuries.



The *obraje* could be considered a form of adaptation of the European production model to the social and economic characteristics of the New World (Bouhrass, 2005). First defined as a “factory in embryo” by Chavez Orozco in 1938, many have questioned the nature of *obraje* presenting, as is natural, very divergent positions ranging from small shops with two or three workers to extensive production settlements, organized and based on a workforce of hundreds of workers. Over time, the term *obraje* was used to define larger, more organised manufacturers, with consequently greater manpower. This distinguished them from *telares sueltos* or *trapiche* that indicated smaller, mainly family-based, enterprises. However, there remains no sense of a single framework that fits all *obraje*. Nor did they have a homogeneous production model or broadly similar management models. Each *obraje* was different but, they all served a common purpose: the production of wool (and partly cotton) textiles that, given the particular type of market of the colonies of New World, could not be imported from the Iberian Peninsula.

The case presented in this paper concerns the model of *obraje* developed in New Granada. At the time of the conquest, there were sufficient textile manufactures to satisfy the demand of the local market. But these were handmade products based mainly on cotton and, to a minimal extent, on wool from alpacas and llamas – wool from sheep did not exist there at that time (Borchart de Moreno, 1995). With the arrival of the conquerors followed, very soon, by immigrants coming from the woollen regions of Spain (Castile, Extremadura, Galicia), accompanied by the introduction of sheep, wool manufacture began to develop on a larger scale, partly due to the skills of the immigrants, and partly because of the know-how that already existed locally (Pollard Rowe, Miller and Meisch, 2007; 2012).

#### *The Obraje system of the Viceroyalty of New Granada*

At the time of its conquest by the Spanish in the 1540s, the economy of Ecuador and its *Audiencia* of Quito (province of the vice-royalty of New Granada), established by Royal decree in 1563, was based primarily on agricultural production and textile processing. It lacked, for example, the large mines to be found at that time in the case of New Spain (Mexico) or Peru. The textile companies that developed around Quito and the two other major centres, Otàvalo and Riobamba were, in general, part of production complexes owned by *encomenderos* – holders of land exploitation rights, usually Spaniards (Soasti, 1991). The reference market of these companies was Lima which, at that time, represented a very important commercial centre, through the ports of the Pacific. It was from the Peruvian capital, home of the vice-royalty of Peru, that products from the East (China and the Philippines) and metal utensils from local manufacturers arrived in Quito (Sempat Assadourian, 1982).

The "system" of the *obraje*, beyond a definition based on dimensions, is identifiable from the separation of production from the family. In contrast, the *trapiches* and *telares sueltos* were small shops organized around family work.<sup>4</sup> The *obraje* can be considered a productive organization that corresponds more to a factory than a pre-capitalist medieval artisanal workshop. Characteristically, an *obraje* had, (1) a horizontal division of labour; (2) centralised production; and, (3) supervision and coordination of activities (Salvucci, 1987). However, typical features of the handcraft workshop persisted, above all the lack of any specialization of the production site. Furthermore, an *obraje* was located within the owner's home, not in a special structure built for the purpose (Miño Grijalva, 1993). This represents the point of greatest detachment between the *obraje* and the factory, although it is useful to underline that in the mid-eighteenth century, even the manufacture of Spanish *indianas* (cotton printed textiles) had a similar form, with the comingling of the workplace and home, both for the workers and for the owner. Buildings built specifically for the industry only began to spread in Europe and beyond in the nineteenth century.

From an economic perspective, *obraje* met the demand for cheap consumer products, primarily woollen, plus some cotton. This was achieved through the integration of the different production phases and replacement of the imperfections of the colonial market, combined with a reduction in transaction costs. In particular, *obraje* benefited from integrating the production phases with higher added value, such as weaving and colouring of the fabrics, and the lower value phases, such as carding and spinning. In this way, rather than representing a form of embryonic factory, the *obraje* was a proto-factory that followed the example of what happened during the same period in the previously mentioned Catalan factories of *indianas* of the Iberian Peninsula.

#### *The Obraje of the Hacienda of San Ildefonso*

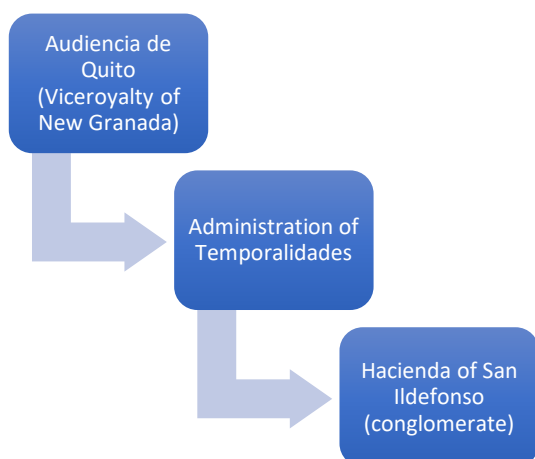
The *obraje* de San Ildefonso was one of the longest-surviving *obraje*, dating back to at least the end of the sixteenth century. In 1622, it was owned by a company composed of Antonio Guadalupe Espinosa, Juan Vera Mendoza and the Lopez de Galarza family. It had a workforce of around 60 black slaves. In 1724, it was acquired for 45,000 pesos by the Jesuits, provoking strong reactions to the presence of the slave labourers (Tardieu, 2012; Juanen, 1941). According to an inventory of 1734, the value of the entire San Ildefonso company – including the *obraje* and 7 other related companies – amounted to approximately 174,000 pesos which generated an annual income of 14,082 pesos (Borchart de Moreno, 1998). In 1767, when the Jesuits were expelled from the Spanish domain, the company's assets were confiscated by a new institution specifically created for that role by the State: the Administration of *Temporalidades*. This institution had the task of recording all the

assets belonging to the Jesuits, verifying the rents and debts and then administering them on behalf of the crown, or selling them, according to whichever was deemed most convenient (Cushner, 2011).

Under an order made by Charles III of Spain in 1767, in 1769 the *obraje* de San Ildefonso became part of the heritage of the Administration of *Temporalidades*. Due to an economic crisis that impacted Ecuador in the last decades of the eighteenth century, the San Ildefonso *obraje*, along with numerous other former Jesuit businesses, remained unsold and continued under the Administration of *Temporalidades*.

The hierarchical scheme shown in Figure 2 demonstrates how the San Ildefonso hacienda was subject to the control and coordination of the *Temporalidades* administration. In turn, this Administration reported to the *Audiencia* of Quito, the administrative body of the Ecuadorian province within the Viceroyalty of New Granada.

Figure 2. Hacienda of San Ildefonso, control diagram



Source: Authors' elaboration

The management of the *obraje* retained the administrative system established by the Jesuits. In essence, the central administration in Quito provided the San Ildefonso company with all the imported raw materials necessary for production (particularly, dyes and etchers), while the finished product's transport costs and wages remained at the expense of the *obraje*. Raw wool was produced and supplied by integrated businesses mainly, as shown in Table 2, from the associated *haciendas* (farms) of Llangagua, Cunuyacu and Pacobamba. Coal and wood came from the haciendas of Quichivana and Tontapi. Any unusual additional need for these resources could be met by the local market.

Table 2. *Obraje* of San Ildefonso, origin of wool supply (by weight, in *libras*)

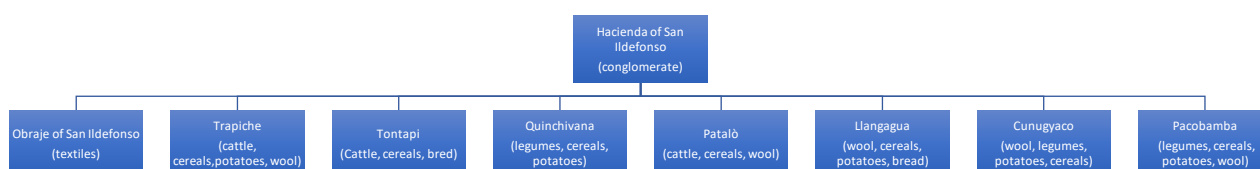
Hacienda/Year	1777-1780	1780-1787	1787-1788	1794	1795
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Llangagua	8060	10666	12571	23764	37228
Cunuyacu	12926	14400	14446	14546	15315
Pacobamba (Riobamba)	23382	26241	31926	n.a.	n.a.
Trapiche (Otavalo)	1900	1072	1078	791	713
Tontapi	1234	890	1147	1147	995
Quichivana	1670	1199	1150	1189	938
Patahalò (Latacunga)	1817	1480	1735	1259	954
Sent by General Direction <sup>5</sup>	26437	368	n.a.	19091	7075
Direct buying	9739	11713	3947	2678	10921
<b>Total</b>	<b>87165</b>	<b>68026</b>	<b>68000</b>	<b>64465</b>	<b>74137</b>

Source: Borchart de Moreno, 1998

The peculiarity of this case lies in the fact that, unlike many similar manufacturers present throughout the Spanish New World, the Hacienda of San Ildefonso was at the head of a production conglomerate (Figure 3), and its *obraje* was integrated with the other farms that supplied the raw material as well as foodstuffs for the livelihood of the workers. This productive model inaugurated by the Jesuits limited the need to turn to the market for the bulk of the supplies needed by the company, which sterilized the effects of the economic crisis-driven cash shortage prevalent at that time.

Figure 3. Hacienda of San Ildefonso. Organization diagram



Source: Authors' elaboration

The textile products of the *obraje* were of low quality, aimed at a market with low purchasing power. Three types of woollen cloth were produced: *pañò* and *pañete* (coloured heavier woollen), *bayeta* (half-worsted woollen, felt or flannel) and *jerga* (coarse cloth). The products were sold through different channels (Borchart de Moreno, 1998): the local market; Lima (the largest consumer centre in the area); Quito (to the administration of the *Temporalidades* for subsequent distribution on the on the capital market); used as a form of remuneration or benefit to workers; and, sold to workers, which was recorded in a special register: the book of *socorros de obraje*.

The yearly production of San Ildefonso is reported in Table 3.

Table 3. *Obraje* of San Ildefonso, yearly textile production (by length, in *varas*<sup>6</sup>)

Item/Year	1777-1780	1780-1787	1787-1788	1794	1795
Paño azul (blue cloth)	9154	7768	8199	4789	6826
Paño celeste (pale blue cloth)	103	24	n.a.	n.a.	n.a.
Paño pardo (brown cloth)	208	376	489	152	111
Paño blanco (white cloth)	82	138	n.a.	n.a.	n.a.
Pañete (heavier woolen)	1864	1557	2127	1973	1701
Bayeta blanca (white flannel)	1257	1567	814	427	123
Bayeta azul (blue flannel)	n.a.	n.a.	n.a.	1248	735
Jerga (coarse cloth)	4206	8308	5635	6789	5867

Source: Borchart de Moreno, 1998

### *Work and production in the obraje*

The production process was divided into 4 successive phases: (1) the preparation of raw wool involving sorting, cleaning and carding the fibres; (2) spinning or drawing and twisting the loose fibres into yarn; (3) weaving, in which some yarn, the warp, was laid lengthwise, and other yarn, the weft, was run across over, and under the longitudinal lines to form the rough fabric; and, (4) the finishing stage, which involved fulling, shearing, pressing, and other tasks. Only limited use was made of technology until at least the beginning of the nineteenth century. Where it was used, to Europeans it was obsolete, dating back to Medieval Europe. However, when introduced in the 1540s, it was an advanced technology for the New World. Production was labour-intensive and no further technological innovations occurred until the nineteenth century.

As a result, any increase in productivity was only achieved through how labour was organised, and used (Salvucci, 1987). Most of all, it required sufficient workers to maintain production, which made the labour market a crucial element in the development, maintenance, and any expansion of manufacturing. But, labour was scarce in the colonies and this turned into a general labour shortage due to a reduction in population from the second half of the sixteenth century. The absence of a real labour market – which developed slowly only from the seventeenth century, and only in areas with greater urban density – meant that the *obraje* operated with a labour force of very diverse characteristics: free workers, indentured workers, convicts, forced workers, and slaves, creating a particular overlap between public and private interests (Super, 1976). Nevertheless, as pointed out by Salvucci (1987), because of their use of a differentiated workforce, *obraje* could count on a workforce that was always available without resorting to the imperfect labour market.

The type of labour used not only served to characterize the enterprise, it is considered one of the diagnostic elements of the evolutionary stages of the modern enterprise (Soasti, 1994). From a

theoretical perspective, Chavez Orozco (1938) considers the *obraje* as a capitalist-type enterprise, particularly because it used waged labour. Greenleaf (1967) speaks of an evolution of the work from feudal to capitalist, conforming to the different types of labour that occurred throughout the colonial period in the *obraje*. Based on two royal *cedulas* addressed to Peru, he considers that the *obraje* began employing entrusted labour, then labour from *repartimiento* (a forced labour system imposed upon the indigenous population of Spanish America as a tribute-labour system between 1549 and 1621) and finally, in the eighteenth century, using waged labour (AGI, Audiencia de Quito, 209). With the establishment of the *repartimiento* for forced labour, the possibility was established for the judges to assign the Indians to coercive work activities, considered useful for the community. Naturally, the *obraje* was part of these activities (Greenleaf, 1967).

The use of forced labour by the *obraje* played an indispensable role in the mechanism of social control and punishment imposed on the local population by the Spanish *conquistadores*. Forced labour in an *obraje* was imposed on individuals both as a punishment for crimes committed and as a consequence of an individual's state of insolvency (Moreno Yáñez, 1979). This practice was widely used, supported by pressure from the owners of *obraje* seeking access to cheap labour (AGI, Quito, 128). This use of forced labour conscripted from the criminal and impoverished classes was not unique to Spanish Latin America. A similar system was adopted, for example, in Brazil, supplementing other sources of forced labour: slaves and “freed Africans” to sustain the expanding economy up to the end of the nineteenth century (Silva, Rodrigues, & Sangster, 2018).

Because of strong criticism from the Catholic Church (also an owner of *obraje*) and others, one consequence of this use of forced labour in the *obraje* was a perceived concern for the Spanish monarchy. It responded by ensuring that use of forced labour within the *obraje* was regulated so as to avoid or, at least, limit abuse and prevarications (AGI, Audiencia de Quito, 209). As part of these measures, in 1601 Philip III, by *real cedula* (royal order), forbade the employment of *indios* (natives) in *obraje* except for *obraje de comunidad* (*obraje* owned and operated by natives); and, owners of *obraje* were encouraged to replace the natives with slave African labour (Proctor, 2003). However, even this action proved unsuccessful as African slaves were expensive and their supply in this part of South America was far from plentiful and difficult to organise (Greenleaf, 1967).

During the seventeenth century, the Spanish monarchy changed its position on forced labour, moving away from using conscription to forced labour as a punitive measure for common crimes. Before forced labour was abolished in 1621, the *cedula* of 1601 was amended in 1609, limiting use of native labour in *obraje*, and permitting employment of native boys as apprentices, in order to ensure they acquired the technical skills needed in production activities (AGI, Audiencia de Quito, 5). Nevertheless, coercive means were still widely used, both for the punishment of insolvent debtors

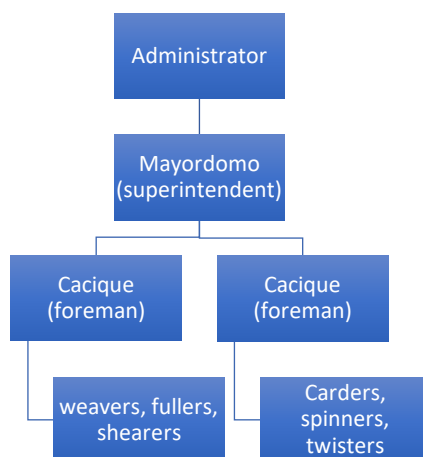
and for those caught begging. The first colonial period coincided with the highest demand for slaves and with a fast decline of the indigenous population. In the absence of native workers, the main colonial industries such as sugar and mining relied heavily upon a workforce of imported slaves.

After 1640, the increase of the population of natives and the *casta* (mixed race) resulted in the increased availability of free wage labour, making slavery correspondingly obsolete. At the beginning of eighteenth century, the *obrajes* began a slow transition from slavery to indebted labor (Florescano, 1996). During that period of decline, slaves moved into highly skilled positions within the *obraje*, such as weavers and cloth cutters, before disappearing altogether as indebted native workers slowly replaced them in the workforce. By the end of the eighteenth century, indebtedness had become the dominant source of labour. For example, in Querétaro (modern day Mexico), the main *obraje* settlement of New Spain, in 1792, natives represented over 70 percent of the labour force and indebtedness was the primary means of recruitment (Proctor, 2003).

Over the course of nearly three centuries, numerous actions were taken to regulate labour within the *obraje*, imposing increasingly stringent limits on the use of servile or forced labour, without, however, succeeding in eliminating abuses and prevarications. As Von Humboldt (1827) described of the poor working conditions he witnessed within these manufacturers during his trip to South America in 1802, the use of cash advances, supplies of food and alcohol, and providing workers with finished textile products, were the main expedients used by the owners of *obraje* to coerce the workers. In this way the owners created a “debt tie” with the workers, effectively securing their service by placing them in debt to the *obraje*.

The problem of managing *obraje* is the crucial point for defining this form of production. The *obraje* had an organizational structure headed by the administrator (the property owner was usually absent), while the responsibility for production activities was entrusted to the *mayordomos* (superintendents). Furthermore, each of the main production functions had a supervisor. The control system was underpinned by two elements: the regulations issued by the viceroys and the internal accounting system. The regulations are essential to understanding the nature of the *obraje*, a private enterprise with a public function: import-substitution-production and social control (Andrien, 1995). Hence the regulations issued in the eighteenth century focused mainly on life and the working conditions within the *obraje*. More specifically, these regulations established the quantity of food necessary for each worker (free or convicted) and the use of punishment within the factory (AGI, Audiencia de Quito, 133). The typical hierarchical structure of a New Granada *obraje* is presented in Figure 4.

Figure 4. Typical hierarchical structure of New Granada's *obraje*.



Source: Authors' elaboration

The production technology used in *obraje* was limited to the loom and dyeing processes. The substantial difference and, consequently, the success of the production model of *obraje* resided in the organizational aspects of production. While the *obraje* maintained a workforce (free or forced) disciplined and organized, subjected to skilled supervision, the organisation of the smaller, mainly family-based, *trapiches* and the *telares sueltos* used an artisan production model where the worker/craftsman defined the rhythm of his production and was the owner of the means of production.<sup>7</sup> In contrast, the *obraje* were not owned by the workers and the production rate was determined by the owner of the *obraje* through the supervisors. (Miño Grijalva, 1990)

Initially, the role of administrator was usually attributed to “white” (Spaniards or of Spanish origin) but increasingly, in the eighteenth century, *mestizos* (people of combined European and Indigenous American origin) performed this role. The tasks of an administrator concerned overseeing the organization of production by the *mayordomo*, a skilled superintendent and specialist in the production process; and control of the native workforce by *caciques* (foremen). The *mayordomo* assigned the workforce to different production phases and controlled the elaboration and quality of produced textiles. The *caciques* were assigned to the different production stages to control the activities of the native *obrajeros* (workforce).

With its labour-intensive production, the impact of the *obraje* on the Ecuadorian labour market was significant. For example, in the province of Quito at the end of the seventeenth century, *obraje* employed about 30,000 people. In 1680, the *obraje* of Licto had 250 workers, Latacunga 384, and Sichos 300 (Ortiz de la Tabla, 1977). A century later, in 1777, the *obraje* of San Ildefonso had 352 active workers (ASE, CS, *Obraje*, caja 24, exp.3) and that of Licto had 324 in 1784 (ASE, CS, *Obraje*, caja 29, exp. J).<sup>8</sup>



## **Accounting and accountability of the *obraje* of San Ildefonso**

The analysis of the development of the accounting system and the accountability of the case studied takes place on two parallel levels: a macro plane and a micro plane. The peculiar organizational structure of the company inherited from the Jesuits and the need to understand its functioning within a general administration, made it necessary to integrate the accounting systems. The accounting system implemented by the Jesuits was retained by the Administration of *Temporalidades*. It served two main functions: to monitor the entry and exit flows of both cash and assets; and to make processes and functions accountable to improve control. Each of the former Jesuit haciendas had a director who was obliged to render the accounts of his work at the end of each administration period (ranging from 1 to 7 years). To do so, the Administration introduced an accounting practice called *cuentas ajustadas* (adjusted accounts) that was a form of normalization of the accounts, for each individual company and for every single balance sheet item.

As part of this process, the Administration of *Temporalidades* and its controlled haciendas adopted a common and shared charge and discharge accounting system. The property initiated the process through a contractual agreement transferring legal responsibilities to the agent authorizing him to manage the entity for a stipulated time, ending the link between the parties with the presentation of the accounts duly legitimized with the signature of the accountants or auditors (Villaluenga de Gracia, 2013). The administrator was charged with the amounts for which he was responsible and was discharged by their payment. The difference between both parties gave rise to the scope, this being the amount that the administrator should return to the property or keep in charge for the next period (Baxter, 1980). In this way the accounts were made comparable within the overall (consolidated) hacienda budget and between different periods.

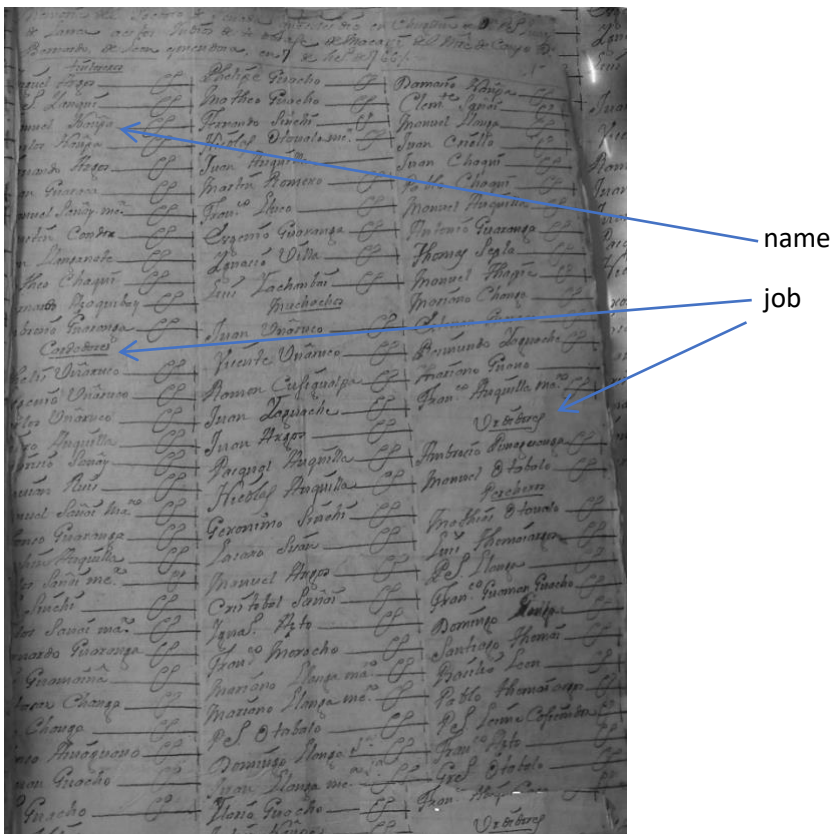
As part of this system, the *obraje* of San Ildefonso had a system of accounts based on 4 books:

- 1) *Libro de rayas* (attendance record).
- 2) *Libro de socorros de obraje* (book of items supplied to workers)
- 3) *Libro de lanas* (book of wools)
- 4) *Libro de tintas* (book of dyeing)

### ***Libro de rayas***

The *Libro de rayas* was used to record the presence of the workers, indicating the days worked in a month. The book was preceded by an index of the names of all workers grouped by category (dyers, carders, spinners, young workers, warpers, weavers, bricklayers, carpenters, handymen, servants), as shown in Figure 5.

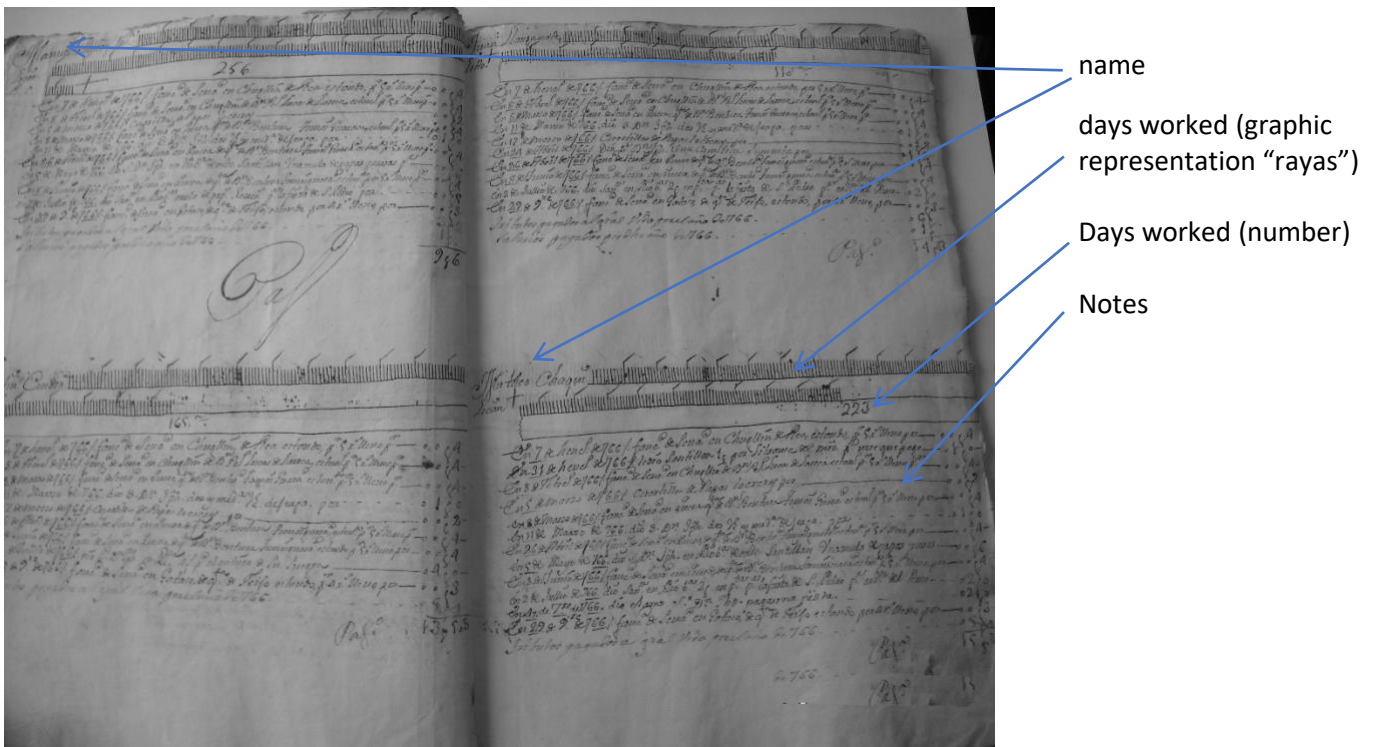
Figure 5. *Obraje* of San Ildefonso. *Libro de Rayas*, index of names



Source: ANE, CS, *Obraje*, Caja 19, exp. 5

As shown in Figure 6, records of two workers were kept on each page of the book. At the top of each record, was the account of the days worked by the use of a horizontal line (the period) and vertical small lines or *rayas* (the days worked), indicating the number of days worked. Every 10 days worked was reported by a graphic sign (a longer vertical line). Below this, details were inserted showing money advanced, food supplied, or finished products delivered. When the work had been paid for, it was marked as paid and the record was closed. Figure 6 presents an example of the records of four of the workers.

Figure 6. *Obraje* of San Ildefonso. *Libro de rayas*, individual registration

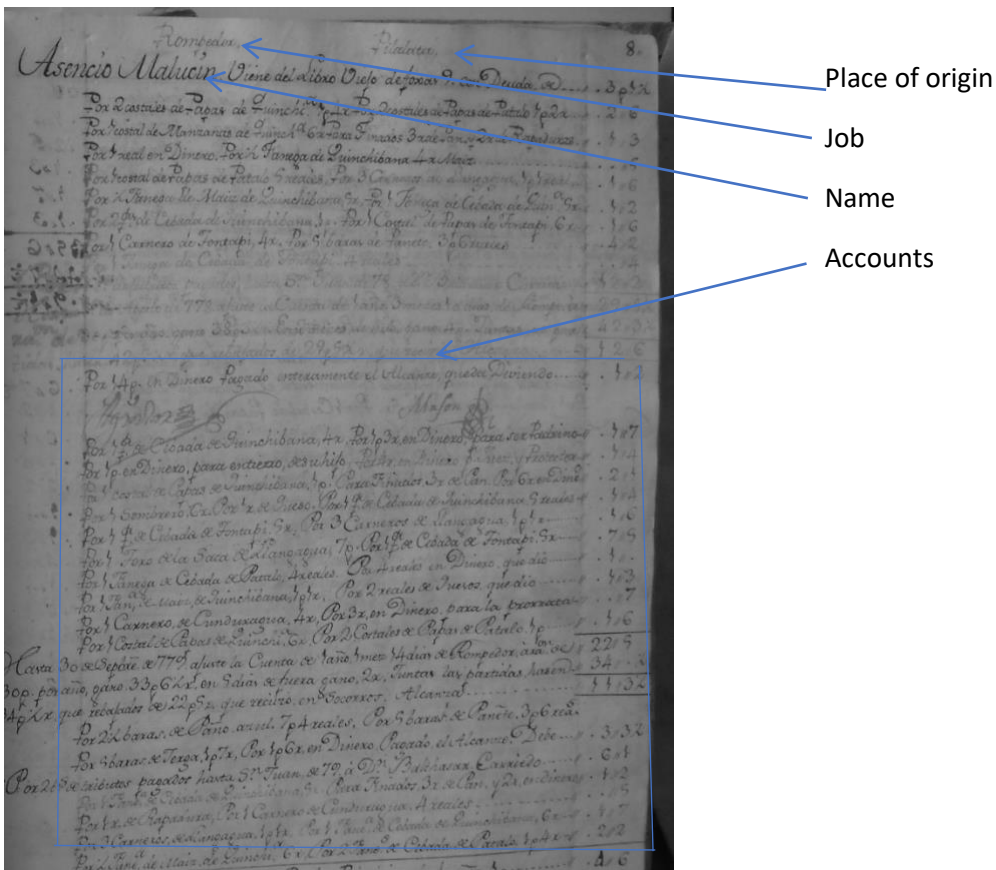


Source: ANE, CS, Obraje, Caja 24, exp. 5

### ***Libro de socorros de obraje***

The *libro de socorros de obraje* contained a chronologically ordered record of all the help given to each worker, such as cash advances and supplies of finished textiles, along with the work undertaken and the amount earned. As shown, the total value of the amount of help given was calculated and then deducted from the amount earned, leaving a balance to be carried forward to the next period. (Figure 7). Once again, the book was preceded by an index of the names of all the workers showing the page on which the entries for each worker could be found.

Figure 7. *Obraje* of San Ildefonso, worker's individual account page in the *Libro de Socorros*



Source: ANE, CS, *Obraje*, Caja 8, exp. 3

This use of a specific book for the accounting of wages was widespread among the Ecuadorian *obraje* and probably originated during the Jesuit administration. However, in the surviving documents of the hacienda of San Ildefonso, no trace of one has been found. The one shown in Figure 8 was from the Licto *obraje* of the *Hacienda* of Halbacea (Riobamba). Given the standardization evident in the accounting system adopted across these *obraje*, it is likely that the wages were recorded in the same way in all the *obraje*, including San Ildefonso.

Figure 8. *Obraje* of Licto (Riobamba). Annual salaries sheet for 1783 (in pesos)

The image shows a page from a handwritten ledger with two columns. The left column contains names, and the right column contains numerical values representing salaries. Two blue arrows originate from the text labels 'Name' and 'Salary (in pesos)' on the right side of the image and point to the respective columns in the ledger.

Source: ANE, CS, *Obraje*, Caja 22, exp. 7

### ***Libro de lanas and the Libro de tintas***

The *Libro de lanas* took account of all the raw wool received by the *obraje* and wool outsourced for spinning and weaving while the *Libro de tintas* reported the purchase of dyeing products.

Each year, all the information present in the account books was collated into an annual balance prepared by the administrator of the *obraje* using the charge and discharge (*cargo y descargo*) method.<sup>9</sup> As shown in Figure 9, the quantity and monetary value of each item is shown separately in chronological order. All the monetary values were reported in *pesos*. One *peso* corresponded to 8 *tomines*, every *tomine* amounted to 12 *granos* (Santacruz, 1782). Separate charge and discharge accounts were prepared for inventory and for cash. The one for wool is shown in Figure 9.

Figure 9. *Obraje* of San Ildefonso. Charge and Discharge account for wool 1780-1781

*Balance hecho del Obraje de S<sup>to</sup> Ildefonso al M<sup>to</sup> Juan Antonio Salas Lucero, desde 23 de Agosto de 80, hasta 26 de Junio de 1781, en que entrego al M<sup>to</sup> Matheo de Jajia.*

**Cargo de Lanas**

P. 134 @ 24 lb. de lanas azules duplicat. que usaron por...	134-24
P. 33 @ 18 lb. de lanas azules duplicat. id.	33-18
P. 36 @ 24 lb. de lanas blancas duplicat. id.	36-24
P. 18 @ 2 lb. de lanas negras duplicat. id.	18-2
P. 298 @ 18 lb. de lanas negras en bellon id.	298-18
P. 398 @ 16 lb. de lanas labat. duplicat. id.	398-16
P. 624 @ 11 1/2 lb. de lanas blancas en bellon id.	624-11 1/2
P. 92 @ 2 lb. de lanas labat. duplicat. id.	92-2
P. 2593 @ 24 lb. de lanas blancas en bellon, recu <sup>to</sup> del P <sup>to</sup> M <sup>to</sup>	2593-24
P. 123 @ 9 lb. de Naya en bellon id.	123-9
<b>Total</b>	<b>4360-12</b>

**Descargo**

P. 1709 @ consumidas en 189 Paños azules fabricados a razon de 1 lb. por pza.	1709
P. 11 @ id. en un Paño Celeste fabricado.	11
P. 143 @ en 13 Paños puros a 1 lb. por pza.	143
P. 96 @ en 8 Paños, a razon de 12 lb. por pza.	96
P. 108 @ en 3 Paños de Naya, a 12 lb. por pza.	108
P. 456 @ en 38 Paños de Naya blanca, a 12 lb. por pza.	456
P. 168 @ en 14 Paños de Naya negra, a 12 lb. por pza.	168
P. 18 @ en 9 Paños finos a 2 lb. por pza.	18
P. 10 @ 18 lb. en 6 Paños de Palomas a 4 lb. por duplicat.	10
P. 4 @ en una pieza doble.	4
P. 18 @ entregat. a los Sombreros.	18
P. 18 lb. duplicat. consumidas en 4 Paños de Naya y Paños.	18
P. 9 @ 11 lb. duplicat. consumidas en la reparacion de lanas de 236 paños a razon de 4 lb. por pza.	9
P. 52 @ 10 lb. de lanas blancas remitidas al Obraje Naya.	52
P. 29 @ de lanas azules duplicat. que exanen.	29
P. 18 @ 13 lb. de lanas blancas duplicat. id.	18
P. 10 @ 9 lb. de lanas negras duplicat. id.	10
P. 90 @ 2 lb. de lanas azules duplicat. id.	90
P. 681 @ 12 1/2 lb. de lana blanca labada sup.	681
P. 96 @ 7 lb. de lana blanca labada sup.	96
<b>Total</b>	<b>3722-2</b>

*Matheo de Jajia*

Annotations on the right side of the image:

- "cargo" of wool (points to the 'Cargo de Lanas' section)
- Quantity (in varas) (points to the first entry in the 'Cargo' table)
- Value for "varas" (in pesos) (points to the second entry in the 'Cargo' table)
- "descargo" (points to the 'Descargo' section)

Source: ANE, CS, Obraje, Caja 27, exp. 3

In addition to wool, the final inventory for the *obraje*, shown in Figure 10, includes:

- Blue dyeing (indigo)
- Turnips
- Vinegar
- Rubber
- Cardoons (to card the wool)
- Pale blue textiles
- Blue textiles
- Finished textiles
- Jergas (coarse cloth)
- Bayettas (flannel)
- Fine cloths
- Bitumen
- Brazil wood
- Wood
- Charcoal

Figure 10. The final inventory of the *Obraje* of San Ildefonso, 1780-1781

Descargo

226 P. 226 Cargas conminadas en la primera de 1780

Existencias del Obraje

Lanas azules	134 @ 24 lb	labas azules
Filos azules	39 @ 1 lb	suplicat
W3 blancos	36 @ 24 lb	suplicat
W0 negros	18 @ 2 lb	suplicat
Lanas negras	23 @ 13 lb	enbelleo
W0	39 @ 16 lb	labas negr.
Lanas blancas	32 @ 2 lb	labas suplicat
W0 enbelleo blancas	62 @ 11 lb	enbelleo
Grana animal	12 lb 3 g	en las 13 @ 24 lb de lanas
W0	12 lb 3 g	en las 3 @ 1 lb de lanas
W0	25 lb 5 g	en 5 can. y 2 can. 6
Acaxipe	4	Bacia
Grana	12 lb	en can. 6
Cintas	75	para en mano de 36
Patas azules	24	para regular a 24 lb enbelleo 6
Canes	3 en	Felans de a 120 v
Felans	4	para en Felans de a 120 v
Canes finos	4	para 29 blancos todanos con 38
Pelanos	7	para todanos
Lanas	7	en mano de los Combustor
Bacon	14	lb
Brasil	24	lb

Alm. Lig. Balanza

Source: ANE, CS, Obraje, Caja 27, exp. 3

The charge and discharge account for cash is shown in Figures 10-12. It begins near the bottom of Figure 11 with entries for cash receipts. The final total on that page of 45,789 is carried forward to the top left of Figure 12. The total receipts of cash of 69,095 is shown at the foot of the page on the left in Figure 12. The total cash payments of 50,128 on the right-hand page is carried forward to the top of the left-hand page in Figure 13. The total of that page is transferred to the top of the right-hand page. The total of that page of 68,013 represents the total cash payments for the period. The calculation at the foot of the page subtracts the total payments from the total receipts. The final figure of 1,081 represents the amount due from the administrator.

Figure 11. Obraje of San Ildefonso. Charge and Discharge account for cash 1780-1781

Cajero de Cavallo	
1	que quedó anterior
Descaño	
1	13. muestro de trapo, con un de habito y Ousef
8	8. Remas recibidas de la Direccion
Descaño	
1	7. mas ganadas en el mes de Julio
1	7. 17. remada a Navas
8	
Cajero de Indios	
1	18312. 1. real de Indios de la Direccion a favor de los Caballeros
1	1042. 2. 1/2. pagados por el ADM.
	18416. 32
Descaño	
73037. 4	73037. 4. E. en el mes de Julio de este Obraje, con un de
2118. 1	2118. 1. real de Indios de la Direccion
8700. 5	8700. 5. 1/2. a Fontana
10000. 2	10000. 2. 1/2. a Direccion
2070. 6	2070. 6. 1/2. a Indios
2516. 7	2516. 7. 1/2. a Indios
2560. 4	2560. 4. a Comandante
218. 4	218. 4. a Indios
11300. 6	11300. 6. 1/2. que viene de la Direccion en Dicho
18416. 32	
Cajero de Indios	
1	27500. 1. de Indios de la Direccion a favor de los Caballeros
1	312. 1. de Indios de la Direccion a favor de los Caballeros
1	326. 7. de Indios de la Direccion a favor de los Caballeros
1	1111. 2. de Indios de la Direccion a favor de los Caballeros
1	1308. 7. de Indios de la Direccion a favor de los Caballeros
1	1148. 3. de Indios de la Direccion a favor de los Caballeros
1	2388. 4. de Indios de la Direccion a favor de los Caballeros
1	238. 1. de Indios de la Direccion a favor de los Caballeros
1	3134. 2. de Indios de la Direccion a favor de los Caballeros
1	72. 1. de Indios de la Direccion a favor de los Caballeros
1	182. 1. de Indios de la Direccion a favor de los Caballeros
1	224. 2. de Indios de la Direccion a favor de los Caballeros
1	551. 1. de Indios de la Direccion a favor de los Caballeros
1	21. 1. de Indios de la Direccion a favor de los Caballeros

Source: ANE, CS, Obraje, Caja 27, exp. 3

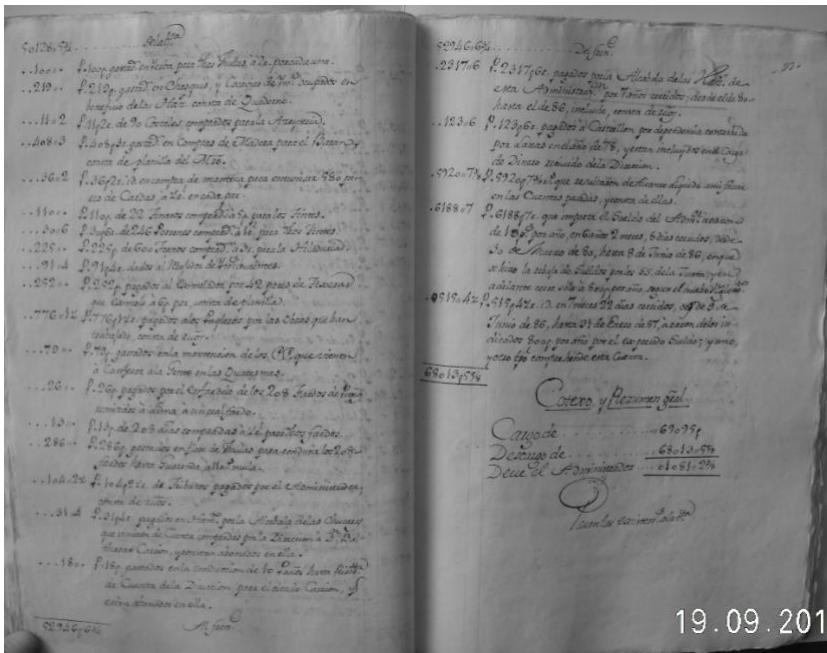
Figure 12. Obraje of San Ildefonso. Charge and Discharge account for cash 1780-1781 (continued)

Cajero de Indios		Cajero de Indios	
1	27500. 1. de Indios de la Direccion a favor de los Caballeros	1773. 7	1773. 7. 1/2. de Indios de la Direccion a favor de los Caballeros
1	312. 1. de Indios de la Direccion a favor de los Caballeros	1103. 6	1103. 6. 1/2. de Indios de la Direccion a favor de los Caballeros
1	326. 7. de Indios de la Direccion a favor de los Caballeros	1702. 2	1702. 2. 1/2. de Indios de la Direccion a favor de los Caballeros
1	1111. 2. de Indios de la Direccion a favor de los Caballeros	2748. 6	2748. 6. 1/2. de Indios de la Direccion a favor de los Caballeros
1	1308. 7. de Indios de la Direccion a favor de los Caballeros	1666. 7	1666. 7. 1/2. de Indios de la Direccion a favor de los Caballeros
1	1148. 3. de Indios de la Direccion a favor de los Caballeros	1653. 1	1653. 1. 1/2. de Indios de la Direccion a favor de los Caballeros
1	2388. 4. de Indios de la Direccion a favor de los Caballeros	2413. 3	2413. 3. 1/2. de Indios de la Direccion a favor de los Caballeros
1	238. 1. de Indios de la Direccion a favor de los Caballeros	1605. 7	1605. 7. 1/2. de Indios de la Direccion a favor de los Caballeros
1	3134. 2. de Indios de la Direccion a favor de los Caballeros	1528. 1	1528. 1. 1/2. de Indios de la Direccion a favor de los Caballeros
1	72. 1. de Indios de la Direccion a favor de los Caballeros	1002. 2	1002. 2. 1/2. de Indios de la Direccion a favor de los Caballeros
1	182. 1. de Indios de la Direccion a favor de los Caballeros	1101. 7	1101. 7. 1/2. de Indios de la Direccion a favor de los Caballeros
1	224. 2. de Indios de la Direccion a favor de los Caballeros	1000. 5	1000. 5. 1/2. de Indios de la Direccion a favor de los Caballeros
1	551. 1. de Indios de la Direccion a favor de los Caballeros	1000. 5	1000. 5. 1/2. de Indios de la Direccion a favor de los Caballeros
1	21. 1. de Indios de la Direccion a favor de los Caballeros	1000. 5	1000. 5. 1/2. de Indios de la Direccion a favor de los Caballeros
	Suma el Cargo		
	89095. 00		

Source: ANE, CS, Obraje, Caja 27, exp. 3



Figure 13. *Obraje* of San Ildefonso. Charge and Discharge account 1780-1781 (final cash balance)



Source: ANE, CS, Obraje, Caja 27, exp. 3

As shown in Figure 14, the inventory of the existing items and raw materials in the *obraje* was reported in a separate sheet at the end of the balance. The Summary Inventory (Figure 14) also reported the value of tools and cattle, while the charge and discharge account only reported raw materials and consumables.

Figure 14. *Obraje* of San Ildefonso. Summary Inventory (separate sheet annex to balance). 1798

*Resumen y Plan del Obraje de S. Ildefonso, baxo de los diferentes nombres que le estan cortados con un Maestro, y un Mayordomo.*

	Bienes.	Obraje.	Batas.	Niton.	Molino.	Tropiche.	Total.
Capilla	000						000
Casas y Obrajes	0445.4	0365				0132	0942.4
Muebles	06.5	Ambabaqui			Pelileo		06.5
Tierras		000	0600	035	03045.0	020085	
Cria de ganado		034				048	
Productos					0202		0202
Utensilios					048		048
Herramientas							
Productos			0148				0554
Alfalfa			0182				0400
Paddock					0200		0200
Cane thicket					02532.4		02532.4
Tools							
Tools					025	04	03045
Farm tools						0603	01045
Wooden tools						017	017
Metallic tools						0676	03162
Stone tools						1256	2965.4
Pesos						068	0117
Medidas <sup>10</sup> (wheat)						0209	0209
Wool							0370.3
fabric							3969.4
Dyeing products							094.4
Equipment for prison							036.0
<b>Total</b>	<b>6792.1</b>	<b>0487.2</b>	<b>1250.6</b>	<b>049.6</b>	<b>25514.4</b>	<b>0340024.0</b>	

Source: ANE, CS, *Obraje*, Caja 32, exp. 7

The contents of the summary inventory are shown translated in Table 4.

Table 4. Translation of the Summary and plan of San Ildefonso *obraje* under the direction of a Master and a Mayordomo (superintendent). All the values are in pesos.

	Items	Obraje	Fulling mill	Niton hacienda	Mill	Tropiche (small obraje)	Total
Equipment	Chapel	000	"	"	"	"	000
	Buildings	0.445.4	0.365.0	"	000	0.132.0	0.942.4
	Furnitures	0.6.5	Ambabaqui	"	Pelileo	"	0.6.5
	Land	"	000	0.600.0	0.35.0	19.45.0	20.085.0
Cattle	Flocks	"	"	0.434.0	"	"	0.434.0
	Cows	"	"	"	"	0.292.0	0.292.0
	Mules	"	"	"	"	0.48.0	0.48.0
	Mares	"	"	"	"	"	"
Fruits	Products	"	"	0.148.0	"	0.6.0	0.554.0
	Alfalfa	"	"	1.182.0	"	0.400.0	0.400.0
	Paddock	"	"	"	"	1.200.0	1.200.0
	Cane thicket	"	Batan	Forge	Mill	2.512.4	2.532.4
Tools	Tools	"	0.25.0	0.4.0	0.14.6	0.60.3	0.104.5
	Farm tools	"	"	"	"	0.1.7	0.1.7
	Wooden tools	0.220.2	0.28.2	"	"	0.67.6	0.316.2
	Metallic tools	1.624.6	0.20.0	0.64.6	"	1.256.0	2.965.4
	Stone tools	"	0.49.0	"	"	0.68.0	0.117.0
	Pesos	0.23.0	"	0.68.6	"	"	0.23.0
Products	Medidas <sup>10</sup> (wheat)	0.2.0	"	"	"	0.20.9	0.22.0
	Wool	0.370.3	"	"	"	"	0.370.3
	fabric	3.969.4	"	"	"	"	3.969.4
	Dyeing products	0.94.4	"	"	"	"	0.94.4
Equipment for prison	0.36.0	"	"	"	"	0.36.0	
<b>Total</b>	<b>6.792.1</b>	<b>0.487.2</b>	<b>1.250.6</b>	<b>0.49.6</b>	<b>25.514.4</b>	<b>0.340024.0</b>	

Source: Authors' elaboration

The summary inventory of the *obraje* of San Ildefonso (Figure 14) and the overall inventory for the entire conglomerate for 1798 (Figure 15) are the most recent available accounting documents.

It is probable that the economic crisis generated by the Franco-English war in Europe and the strong earthquake that struck Ecuador in 1797 were fatal for the company's activity, of which no more traces can be found in the following century. The overall results for the *obraje* shown in the final column of Figure 14 (Table 4) are reproduced in the first column of the Hacienda of San Ildefonso (conglomerate) inventory sheet shown in Figure 15 (Table 5).

The inventory provides a lot of information relating to the functioning and the accountability model adopted by the hacienda. The items of inventory are divided between the various productive functions: *obraje* (spinning and weaving); *batan* (fulling); mill; *trapiche* (spinning), which, we could speculate, would suggest a primitive attempt to identify industrial costs (overhead) (Edwards, Newell, 1991; Edwards et al. 1995; Boyns, Edwards, 2012).

Figure 15. Hacienda of San Ildefonso (conglomerate). Summary inventory 1798

Name of controlled activities (firms)  
 Item  
 Typology  
 Value

Source: ANE, CS, Obraje, Caja 32, exp. 7

The summary inventory for the San Ildefonso (conglomerate) is shown translated in Table 5.

Table 5. Translation of the Hacienda of San Ildefonso (conglomerate). Summary inventory 1798

General state of the haciendas annexed to the *obraje* of San Ildefonso and owned by Temporalidades under the direction and cure of a especially appointed administrator in the city of Quito

	Items	<i>Obraje</i>	Quinchibana	Fontapi	Patalò	Llangagua	Total
Equipment	Chapel	000	"	"	"	000	000
	Buildings	0.942.4	0.25.0	0.25.0	0.60.0	000	1.048.4
	Furniture	0.6.1	"	"	"	0.16.3	0.22.4
	Land	20.055.0	4.000.0	19.000.0	10.650.0	77.109.0	130.844.00
Cattle	Flocks	0.434.0	0.444.0	0.668.0	0.966.7	24.44.0	26.556.7
	Cows	0.292.0	0.238.0	0.402.0	0.335.0	5.43.0	6.350.0
	Mules	0.48.0	"	"	"	0.608.0	0.656.0
	Mares	"	"	"	"	0.50.0	0.50.0
Fruits	Products	0.154.0	0.727.0	1.249.6	1.199.4	0.696.0	4.026.3
	Alfalfa	0.400.0	0.50.0	0.292.4	3.725.0	2.0.0	6.467.4
	Paddock	1.200.0	"	"	0.400.0	"	1.600.0
	Cane thicket	2.512.4	"	"	"	"	2.512.4
Tools	Tools	1.104.1	0.58.6	0.55.4	0.67.6	0.42.0	0.328.1
	Farm tools	1.1.7	0.1.0	"	"	0.24.4	0.27.8
	Wooden tools	1.316.2	"	"	0.5.0	"	0.321.2
	Metallic tools	2.965.4	"	"	"	"	2.965.4
	Stone tools	1.117.0	"	"	0.100.0	"	0.217.0
	Pesos	0.23.0	"	"	"	0.16.2	0.39.0
	Medidas (wheat)	1.22.0	0.2.0	0.2.0	0.2.0	0.2.0	0.30.0
Products	Wool	1.370.3	"	"	"	3.754.4	4.85.4
	fabric	3.969.4	"	"	"	"	3.969.4
	Dyeing products	0.94.4	"	"	"	"	0.94.4
	Equipment for prison	0.36.0	"	"	"	"	0.36.0
	Total	34.094.7	5.545.7	21.690.7	17.511.1	113.365.4	192.207.6

Source: Authors' elaboration

The role of the administration of a single hacienda was towards control over production, costs, and cash rather than calculating or monitoring profits and losses. In contrast, the financial information was required by the central Administration of *Temporalidades* which prepared the annual financial balance statement for each hacienda from its inventory balances. This reflected a business model much closer to socialist planned economy (perhaps an inheritance from the Jesuits' centralised organization – see Quattrone, 2004) than a mercantile/capitalist one. Figure 16 shows the Administration balance statement for 1787-1788. It is then shown translated in Table 6.

Figure 16. *Obraje* of San Ildefonso. Balance statement for 1787-1788 (prepared by the

Administration of Temporalidades)

Estado de lo que han producido el Obraje, y Haciendas de San Ndefonso, en año, y 11 meses corridos, desde 1.º de Febrero de 1787. hasta 31 de Diciembre de 1788, bajo la Administracion de Don Ramon Ponce.

Habe haver.		Debe.	
Por 134,332 varas de Pano azul, remitidas a Lima, a 2p. en 164- Tardos, en el tiempo de esta Cuenta . . . . .	26807.	Por 386 p. remitidos en Dinero de la Direccion, en varias partidas que constan del libro de Cuentas, para suplementos del Administrador, Sugetos, y otros necesarios de la Administracion . . . . .	3861.3
113761. de Vega, aleno, y albas, incluidos los fletes de la Cruzada de San Ndefonso . . . . .	1137.6	11768.6 de Tributos pagados por el año de 77, id . . . . .	4768.62
382 varas de Pano azul a 2p. remitidas ala Direccion . . . . .	764.	4893 p. de 2174 l. 156. de Finta anual, a 182. C. . . . .	4993.22
975 varas de Vega, a 2. id. . . . .	2113.6	1174 p. de id. en Aleno, Azuo, Alumbu, Novillos, y otros efectos, incluidos 24722. de Charquis B. . . . .	1174.296
3939. Cameros, a 4. id. . . . .	1969.4	52 p. cobrados a varios Sugetos que devian . . . . .	52.5
14 puros de Caudas dados al Obraje de Navachi, a 1oz. . . . .	17.4	1081, 242. que en la anterior Cuenta, queda el Adm. y en la presente se hace Cargo de ellos en la misma partida de la Cuenta gene- ral de Dinero . . . . .	1081.245
1533, 222. que importa el Fualdo del Administrador en el tpo. de esta Cuenta, a Tizon de 800 p. por año . . . . .	1533.22	1638, 762. que resultan de Alance a favor del Adm. inclusa la Cantidad del Fualdo de enfrente . . . . .	1638.76
<b>Aumento.</b>		<b>Menoscavo.</b>	
1465 @ 12 lb. de Lana blanca en bellon a 12 y . . . . .	1668.6	1016 varas de Pano azul a 2p. y 45. Sombreros de cañero a 12. . . . .	2099.
822 @ id. la misma a 3p. . . . .	369.6	96 lb. de Alambre arg. y 72 lb. de Soma y Capal a 12. . . . .	328.13
20 @ 18 lb. id. y 18 lb. la misma a 12. y 78 @ 8 lb. en bellon a 6. . . . .	369.6	13 @ 22 lb. de Cobre a 800 p. y 5 @ 11 lb. de Estano a 32. C. . . . .	408.5
3 @ 5 lb. id. azul a 5p. y 4 @ 14 lb. de hilos a 5 p. . . . .	175.22	14 @ 18 lb. de Hierro a 2. C. y 13 @ 16 lb. de Hierro a 1. C. . . . .	152.22
343 lb. de Finta anual a 182. y 109 lb. de Reton a 2. . . . .	799.	163 puros de Caudas viejas, a 1p. . . . .	163.
13632 v. de Finta a 12. y 1059 v. de Terga a 2. . . . .	916.2	16 Mulos viejos a 10p. y 10 Buecos a 3p. . . . .	190.
173 v. de Pano azul a 1oz. y 22 de Cortes a 4p. . . . .	636.6	88 Reguas a 6p. 2 Cavallos a 7p. y 3 Puros de Cera, a 8p. . . . .	266.
662 puros de Polayras a 1p. y 2152 v. de Lienzo a 12. . . . .	112.48	322 Quindas de Caña a 25p. y 40 p. de Tapacanos . . . . .	812.4
133 Cruzas de Baucos a 4p. y 12 Ducas a 5p. . . . .	592.	875 v. de Cañada a 5. y 18134 Cortes de Pajas a 4. . . . .	1492.3
15331 Objas a 32. y 220 Zedros de pasta a 4. . . . .	698.44	57 p. de 7 partidas menores . . . . .	87.22
347 de Muz a 12. y 247 de Nabo a 2oz. . . . .	557.	Importa el Debe, y Menoscavo. 26427.52	
Importa el Habe haver, y Aumento. 44871.34		Que al año corresponda . . . . .	
Id. del Debe, y Menoscavo. 23427.52		La del tpo de los estajmas . . . . .	
Renta liva de año, y 11 meses. 21443.68		Aumento anual . . . . .	
		13208.4	
Direccion Gnal de Temporalidades a 7 de Diciembre de 1788. Antonio Castropiara			

Source: ANE, CS, Obraje, Caja 30, exp.2

Profits

Synthetic results

Losses

Annual return

Difference from Jesuit administration

Table 6. Translation of the *Obraje* of San Ildefonso Balance statement for 1787-1788 (by the Administration of Temporalidades)

To have			To give		
For 13433 varas of blue fabric (at 2 pesos for varas) sent to Lima in 164 bales during the current period	26867.0		For 3861 pesos sent by General Direction (of Temporalidades) in different occasions for the needs of the administration	3861.3	
For 1137 items of rough canvas, linen,	1137.6		For 4768.6 pesos paid for taxes paid until 1777	4768.6	
For 382 varas of blue fabric (at 2 pesos for varas) sent to Direction (of Temporalidades)	764.0		For 4893.4 pesos paid for the purchase of 2174 pounds of indigo blue dye	4893.4	
For 975 varas of rough canvas	243.6		For 1174.2 pesos for the purchase of iron, steel, wood, wire	1174.2	
For 3939 muttoms	1969.4		For 52.5 pesos paid to different servants	52.5	
14 pairs of combing tools sent to the <i>obraje</i> of Naxichi	17.4		For 1081.2 pesos due by the past administration and charged on the present accounts	1081.2	
Remuneration of administrator (800 pesos per year) for the whole period	1533.2		For 1638. <sup>7/8</sup> pesos which fall within the competence of the present administration	1638. <sup>7/8</sup>	
Total		32532.6			17470.1
Increase			Decrease		
For 468 arrobas of white wool and 308 of washed wool	1668.6		For 1016 varas of blue cloth and 45 ordinary hats (sombrosos)	2055.0	
For 204 arrobas of washed black wool and 78 arrobas of wool "en bellon"	365.6		For 96 pounds of wire and 724 pounds of rubber and copal	328.1	
For 30 arrobas of blue wool and 4 arrobas of yarn	175.2		For 43 arrobas of copper and 3 arrobas of tin	408.5	
For 343 pounds of indigo blue dye and 109 pounds of bitumen	799.0		For 14 arrobas of iron and 131 pounds of steel	154.2	
For 1363 varas of light cloth and 1059 varas of coarse cloth	946.4		163 pairs of old combing tools	163.0	
For 479 varas of brown cloth and 9 pounds of short cloth	636.6		For 16 old mules and 10 donkeys	190.0	
For 66 pairs of gaiters and 245 pounds of linen	112.4		For 38 mares, 2 horses and 2 ox	266.0	
For 133 cows and 12 steers	592.0		For 32 pounds of canes	812.4	
For 18331 sheep and 220 pigs	6984.1		For 875 pounds of barley and 1813 pounds	1492.3	
34 fanegas of corn and 2 and $\frac{3}{4}$ fanegas of turnips	57.7		For 87.4 pesos by 7 different minor activities.	87.4	
Total		12338.5	Total		5957.4
	Total (to have and Increase)	44.871.3	Total (to give and Decrease)		23427.5
	Total (to give and Decrease)	23427.5			
	Net income (1 year and 11 months)	21443.6			
				That is a yearly income of <sup>11</sup>	11187.5
				At the time of Jesuits management was	7979.12
				Yearly increase	3208.4

General Direction of Temporalidades December 7<sup>th</sup> 1790

Source: Authors' elaboration

The balance, as shown in Figure 16 and Table 6, reported the increase in production and financial flows and the net profit with the positive difference compared to the previous year. In this sense, the balance represents a control and governing tool on administrators of hacienda and *obraje* of San Ildefonso by the Administration of *Temporalidades*.

## Conclusions

The study is a first attempt to investigate a fundamental element of the Spanish colonial economy of the seventeenth and eighteenth centuries: the establishment of a unique production system developed across all Spanish America from the beginnings of its colonization, organized in a wide network of manufactures and farms subject to direct control from the centre. In order to obtain more accurate control of production flows and workers and facilitate control, new accounting and accountability techniques were adopted. This facilitated the Spanish Government's goal to build a group of people measurable and governable at a distance (Foucault, 1991; Miller and Rose, 1990; Silva et al., 2019), creating records that could serve the interest of the Spanish Monarchy to reduce the costs of transactions and increase its revenues. To ensure its success, the technologies of management of the hacienda and the *obraje* were enforced by the adoption of a hierarchical structure within the company in a manner very similar to how this was being done in European textile mills of the time.

This paper addressed the research question: How were accounting and accountability applied in the management of a proto-capitalist and very peculiar enterprise: the *obraje*? In doing so, it contributes to the literature on accounting and accountability practices by examining the emergence of the new accounting and accountability techniques that were adopted, focusing on the case of a former Jesuit enterprise (hacienda) that passed to the Spanish Crown after the Jesuits were expelled in 1767. A governmentality framework was adopted to present a case study of the Hacienda of San Ildefonso in Ecuador, its controlling institution, the *Tempralidades*, and the *obraje* established within the Hacienda based on division of labour and involving vertical integration of the business in a proto-capitalist economic model.

In our analyses of those techniques, this study demonstrates the diffusion and progress of these calculative technologies far from Europe, in a region usually considered under-developed or part of a centre-periphery scheme with a centre based in Europe and a periphery constituted by the colonies (Wallerstein, 1974). The evidence shows the existence of a polycentric model, in which autonomous and interrelated markets and institutions develop around the different centres (Cardim et al., 2012).

The management of these properties involved re-distribution of space and production functions within the facility that enabled adoption of an accounting system designed to exercise control augmenting the visibility of groups or phases. The resulting reduction in production costs, improved internal efficiency, and the implementation of work discipline and control in these "proto-factories" increased production compared to the traditional artisan-made-woollens industry previously in place.

Thus, the organization structure provided a hierarchical scheme of space. The configuration

of space within the *obraje* made it possible to assign specific spaces to workers and vice versa. The cost calculations made each production stage visible (accountable) and then modifiable. This visibility assigned to each unique phase permitted the exercise of disciplinary power on workers. Through accounting, spaces (production functions) and individuals were also rendered accountable “at a distance”. Furthermore, the control enforced by the accounting system was able to monitor precisely the different production phases and workers. This control at a distance was the intervention tool adopted to guarantee the reproduction of the labour power within a context of “capitalisation” of economy. It is important to highlight that, despite the “use” of African slaves, most of the workers in the *obraje* were free workers. In this sense, the accounting system was not a tool to control a social or race minority (Annisette, 2009; Annisette and Prasad, 2017) but a management tool.

As usual in historical studies that centre around books of account, the limitations of this study lie in the incomplete set of surviving records available to study. However, sufficient have survived to provide confidence in the conclusions presented. Further planned studies on this theme include analysis of privately owned *obraje* in order to compare the efficiency and merits of the accounting systems in use to those adopted in the *obraje* owned and managed by the State.



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## Notes

1 New Granada was the jurisdiction of the Spanish Empire in the north of South America, corresponding to present-day Colombia, Ecuador, Panama, and Venezuela.

2 This map is in the public domain and available at:

[https://commons.wikimedia.org/wiki/File:1730\\_Covens\\_and\\_Mortier\\_Map\\_of\\_South\\_America\\_-\\_Geographicus\\_-\\_SouthAmerica-covensmortier-1730.jpg](https://commons.wikimedia.org/wiki/File:1730_Covens_and_Mortier_Map_of_South_America_-_Geographicus_-_SouthAmerica-covensmortier-1730.jpg)

3 The *obraje* of San Ildefonso was one of several entities within the Hacienda de San Ildefonso. It was coincidentally located in a town with the same name as the Hacienda.

4 “*Obraje* buildings [ranged] from 5,600 to almost 40,000 square feet [or more] could house between 4 and 40 looms, and employ from 40 to 250 men, women, and children” (Encyclopedia.com). Available on 14 November 2020 at <https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/obraje>.

5 The General Direction was the headquarter of the Hacienda of San Ildefonso located in Ambato (Quito province)

6 A *vara* was approximately 0.8359 metres.

7 The *telares sueltos* or individual looms were characterised by a wide variety of social, institutional and productive relationships; including looms operated by (almost) independent handicraft producers, cottage and domestic workers, often financed by merchants. The *trapiche* (literally: mill) was mainly a small obraje, family owned and operated, where common stuffs were woven and dyed (Salvucci, 1987).

8 In 1690, the population of Quito province was about 273,000. In 1764, it was reduced at around 130,000, while the whole capital amounted 63.565 in 1784 (Inec, 2015; Powers Vieira, 1994).

9 “Charge and discharge” was an accounting procedure typically used when the economic activity of an organization was entrusted to an agent, especially in public, religious and non-profit entities (Villaluenga de Gracia & Llibrer Escrig, 2019; Hernández Esteve, 2007).

10 The *medida* was a unit of grain volume that equals between 1,181 and 2,267 kg

11 This is calculated by taking 12/23 of the net income for the 23 months. The adjusted accounts of the hacienda were prepared by the administrator and sent to the Administration of *Temporalidades* for verification. These accounts analytically reported the trends of all the companies belonging to the conglomerate with results and flows (determined in quantity).

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- Audiencia de Quito (Quito)  
volumes:

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- 5 - Real Cédula al Presidente de la Audiencia de Quito, Lope Antonio de Munibe, ordenándole que él y el Obispo señalen congrua a los indios que trabajan en obraje y a los gañanes y pastores y a los empleados en otras ocupaciones. Se dió otra igual al Obispo de Quito (1684);
- 128 - Real Cédula al Presidente y oidores de la Audiencia de Quito sobre sobre la conveniencia de fundar obraje en el repartimiento de Otavalo para poder cobrar los rezagos de los tributos (1711);
- 133 - El presidente y oidores de la audiencia de Quito avisan el recibo de la cédula en la que se manda cesen del todo las mitas de los obraje, galpones y chorrillos, y que éstos se sirvan de indios voluntarios (1737);
- 209 - Real Cédula al presidente de la audiencia de Quito sobre los siguientes temas: turno que deben seguir los oidores en la visita de la tierra; que los obraje se visiten por lo menos cada dos años; que avisen de los casos en que el virrey se exceda en temas de justicia; que procuren se reúna el donativo gracioso que está ordenado pues las necesidades crecen cada día; que al escribano de la visita tomada al licenciado Esteban Marañón se le paguen sus honorarios de penas de cámara (1602).

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