

The Roles of Accounting in Agro-Pastoral Settings: The Case of the Landed Estates of Prince Sambiasi in the Mid-Eighteenth Century

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ABSTRACT: International literature on agricultural accounting is yet to pay a significant level of attention to the investigation of the roles that accounting can play in the agricultural domain beyond its traditional function of promoting efficiency and rational decision making. Informed by [Miller and Power's \(2013\)](#) analysis of the functions that accounting can have in different socio-institutional contexts, the paper adds to extant literature by studying the roles of accounting in Prince Sambiasi's properties, located in Southern Italy, in the mid-eighteenth century. On his lands agricultural and pastoral activities were managed in a semi-feudal setting, combining serfdom and waged labor, barter and monetary exchange, consumption and production. Based on primary and secondary sources, this study focuses on the property lists, inventories, the double-entry bookkeeping system and workers control practices used on Prince Sambiasi's estates to document how they were employed as territorializing, adjudicating, mediating and subjectivizing practices.

Keywords: agricultural accounting; Italy; double-entry bookkeeping; labor accounting; tally; 18th century.

I. INTRODUCTION

Theories and practices related to agricultural and pastoral accounting have increasingly attracted interest among accounting historians. Research has focused on different timeframes, from the Middle Ages to the 20th century, and on multiple social forms, investigating social contexts as diverse as manorial, feudal, capitalist, fascist, or communist. Nevertheless, literature in the field of agricultural accounting has mainly focused on the Anglo-Saxon context, most especially Britain, while other European countries have mostly escaped the attention of accounting historians. Several studies have sought to document in detail the functioning of accounting systems in landed estates ([Davies 1968](#); [Ross 1968](#); [Harvey 1972, 1994](#); [Heier 1988](#); [Jones and Collins 1965](#); [Lee and Osborne 1994](#); [Mussari and Magliacani 2007](#); [Talbot 2008](#)), or have focused on the agricultural domain to show the emergence of new accounting practices ([Jones 2009](#); [Scorgie 1997](#); [Oldroyd 1996](#); [Lampe and Sharp 2017](#)), whereas only a few have engaged with an analysis of accounting in close association with its social and institutional context, beyond its strict economic function ([Oldroyd 1999](#); [Bryer 1994, 2004](#); [Hooks and Stewart 2011](#)). Accounting is known for having the potential to create new calculable spaces and to mediate the relationship between different social actors by means of its specific vocabulary and ideas. Moreover, it enables the possibility to evaluate the performance of

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Supplemental material can be accessed by clicking the link in Appendix A.

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an organization or of single persons, and is quintessentially a tool for the exercise of influence over individuals (Miller and Power 2013). Within the agricultural domain, although literature has focused on how accounting can be used to discipline laborers (Hooper and Pratt 1993; Irvine 2012; McLean 2009; Joly 2016), as a power/knowledge device (Oldroyd 1999), or to perpetrate racism and slavery (Fleischman and Tyson 2004; Tyson and Davie 2009; Dyball and Rooney 2012; Oldroyd, Fleischman, and Tyson 2008), the roles of accounting have not been holistically explored. The paper seeks to address this gap by considering the non-Anglo-Saxon context of Southern Italy to investigate the roles accounting played within large landed estates in a peculiar socio-institutional context.

The paper focuses on the case of Prince Giuseppe Domenico Sambiasi's farms in the mid-18th century. The research covers the period between 1726, the year in which Giuseppe Domenico took possession of the Sambiasi estates, and 1776, when he died. Sambiasi resided in Naples and was a descendant of one of the most influential families of the city, but his extensive estates were located in the far-off region of Calabria. In his estates, different activities were carried out, including the growing of several types of products and the breeding of animals. Moreover, in the generally backward economy of the 18th-century Bourbon State, feudal traits and proto-industrial traits blended into a transition that, one century later, would lead to the dismissal of feudalism altogether (Musi 2007). This translated on Sambiasi's estates into a productive structure that was based on both waged labor and feudal serfdom. Surprisingly, for an economically and socially depressed area, Sambiasi implemented a reform of the accounting system in use on his estates, taking advantage of the experience of his newly appointed advisor and bookkeeper, Tommaso Domenico Breglia (Ercolino 1915, 7–8).¹ The accounting system was based on double entries, contrary to the expectation that such a device goes hand-in-hand with the development of a capitalist mode of production when the evolution of serfs into wage workers led to the need for visualizing and extracting surplus in the form of profit (Bryer 1994).

The paper delves into this interesting setting through an analysis of the socio-institutional context and the calculative devices adopted on Sambiasi's estates in the form of property lists, inventories, accounting books based on double entries, and notched wooden rods. The role of accounting within the context in which it operated (Hopwood 1983) will be analyzed in light of the organizing and economizing functions that accounting can play (Miller and Power 2013). As the paper will show, even in the field of agriculture and in a proto-industrial setting, accounting was essential to the "creation" and "visualization" of the estates as an economic domain, to providing a holistic view of its performance, to mediating the relationships with relevant actors, and to promoting a stricter control over the workers in the interest of the landowner.

To achieve the aims of the paper, the documents stored in the archive of the Princes of Campana (hereafter, APC) in the province of Cosenza have been analyzed. The archive records consist of 26 sets of documents covering the period from 1658 to 1862, including notices, the Prince's codes of laws, tax records, accounting books, and legal records. Particular attention has been paid to the accounting books, namely a journal, three ledgers, a waged labor book, a cashbook, an alphabetical index of the ledger, and a list of the estates owned by Prince Sambiasi. Unfortunately, the Prince's correspondence, minutes, and notes do not appear to have survived. Together with written documents, a different type of archival evidence in the form of well-preserved notched wooden rods has been considered. The archival evidence has been examined in detail, considering its form and content. Other documents, most especially those relating to the cadastral calculations on the Prince's lands, were gathered at the State Archive of Naples (hereafter, ASN). Further evidence on the way in which the Prince's estates were organized has been gathered at the State Archive of Cosenza (hereafter, ASC). Primary sources have been complemented with secondary sources relating to the history of Calabria and the Sambiasi family. An invaluable aid in the interpretation of the documents and in the gathering of further background information on their use came from unstructured interviews with Professor Francesco Joele Pace, the owner of the archives and a renowned expert of the history of the area.

The paper is organized as follows. Section II reviews prior literature in the agricultural and pastoral context, while Section III summarizes the key ideas that inform the paper in terms of the organizing and economizing functions of accounting. A description of the political, social, cultural, and economic background of the chosen setting is then provided in Section IV. Section V introduces and discusses the functions played by the accounting tools developed by Sambiasi and Breglia. Finally, in Section VI, the conclusions summarize the results of the work and present its limitations, together with potential avenues for future research.

II. ACCOUNTING AND AGRICULTURE

Accounting history literature about agricultural and pastoral activities is extensive and covers a wide array of timeframes, countries, and problems. Research has been mostly interested in elucidating the functioning of the accounting systems used in the management of landed estates over time, with particular attention for those owned by aristocratic families. The early development of modern accounting practices in the agricultural domain has also been investigated. However, the relationship

¹ Tommaso Domenico Breglia (1712–1766) worked as an accountant for many Neapolitan noble families and ingratiated himself with the Sanseverino family. In 1751, Breglia published his accounting manual, dedicated to Prince Giuseppe Domenico Sambiasi (Breglia 1751).

between accounting and the context in which it operates and the use of calculative devices to intervene in the behavior of individuals who are part of the organization of a landed estate is yet to receive a significant level of attention.

Early research on accounting in the agricultural domain aimed at elucidating the structure and function of accounting tools in the context of medieval farming. In particular, studies have investigated the origin of manorial accounting in the 13th century and its use to manage agency relationships between the lord and the reeve (Noke 1981, 1991), but also the Exchequer system, which is believed to have provided the basis for the development of manorial accounting (Jones 2009). The efficiency of manorial accounting is examined by McDonald (2005) in his study of the Domesday Book. Although McDonald (2005) contended that Norman farming practices compare favorably with modern farming practices, the generalizability of his findings has been questioned (Hooper 2006). Moreover, the functioning of baronial and manorial accounts (Harvey 1972, 1994) and their use by aristocratic families have been examined (Davies 1968; Ross 1968). These papers emphasize the key role played by the aristocratic landowner, the organization of production, and show how the account books were used to keep records of the harvests and monitor those in charge of handling the lord's crops and herds. Similar concerns have been investigated in the context of 17th-century farms in Kent (Toke and Lodge 1927), on the Tuscan lands owned by the Bonsignori family between the end of the 15th century and the first decades of the 17th century (Var 1981), and in Polish manor farms in the 17th century (Turzyński 2011). Moreover, accounting was used by noble families as one of the techniques to adapt to an unstable political environment and to protect their wealth (Miley and Read 2016). Although the aristocracy was obviously a major landowner, during (and after) the Middle Ages the church too enjoyed immense power and wealth, and its lands were often put to good use. Consistently, Dobie (2008) has considered the religious domain when he focused on monastic houses in his analysis of the evolution of accounting techniques and processes in the management of the large estates owned by Durham Cathedral Priory. In a Spanish setting, the accounting system of an affluent Benedictine monastery has been investigated, showing its importance to the accumulation of wealth and privilege (Prieto, Maté, and Tua 2006).

The so-called "British agricultural revolution" (Edwards 2011) has gathered considerable interest and prompted studies seeking to understand the contributions of accounting to the increase of land and labor productivity. Research has shown that accounting systems, although widely used in addressing efficiency, productivity, and agency issues, were still grounded in single entry or charge and discharge accounts, as was the case of the Osborne Farm in the early 18th century (Lee and Osborne 1994), the malting companies in Staffordshire (Talbot 2008), the Bute Estate in Glamorgan (Napier 1991), Henry Best's farm (Woodward 1984), and the Coke Estate (Parker 1975). This seems to contradict the view of double-entry bookkeeping starting to spread with the capitalistic mentality that emerged in British agriculture in the early 17th century (Bryer 1994). Family accounts have also been analyzed outside of Britain, with particular attention on the 19th century, as it was the case of the single-entry accounting system in use in pre-Civil War farms in the U.S. (Heier 1988; Schultz and Hollister 2004, 2008). These analyses also include Australia, with animal-breeding accounting in pre-Federation Western Victoria (Carnegie 1993, 1995), Italy, with the account books of the Rucellai family's farm in Tuscany (Mussari and Magliacani 2007), and France, where the development of the doctrine of "agronomic accounting" has been investigated (Depecker and Vatin 2016).

Beyond the analysis of the use of accounting tools in specific contexts, research has focused on agriculture as a hotbed for the rise and development of accounting practices that would characterize future periods, or even the modern time. Lampe and Sharp (2017) highlighted how in Northern Germany and Denmark the development of accounting techniques in the agricultural domain provided unprecedented impetus to the development of modern practices and helped to promote the economic growth of these countries. Dobie (2011) showed one of the first existing examples of process accounting in the administration of grain at Durham Cathedral Priory, while Oldroyd (1996, 2007) provided evidence of early cost accounting practices in pre-industrial Britain. Scorgie (1997) documented how modern management accounting concepts, such as production capacity, production standards, standard costs, cost allocation, performance analysis, and relevant costs, are adaptations of concepts used by the auditors, stewards, and bailiffs who controlled agricultural activities on landed estates. Failed attempts to develop management accounting techniques in the agricultural sector have also been documented, as it is the case of the system envisaged through the Australian "Blue Book" in the 1960s (Jack 2015). This body of research gives prominence to the evolution of modern accounting techniques, but also challenges the traditional view of management accounting tools being a product of the industrial revolution. Nevertheless, Giraudeau (2017, 204) stigmatized the attempt to find the root of modern practices in either commerce, industry, or agriculture since accounting techniques "were developed conjointly in different sectors of activity, as a result of changing organizational, political, legal and moral contexts."

In recent years, studies in agriculture have sought to analyze accounting practices beyond their technicalities and to understand how these could have been used in the achievement of outcomes that were not necessarily limited to promoting efficiency. Agricultural accounting can therefore be both a power/knowledge mechanism and a tool to improve profitability (Oldroyd 1999), a technique that can promote profit maximization and at the same time emphasize the importance for laborers of a disciplined and prudent personal and professional conduct (Joly 2016). Moreover, accounting practices could be mobilized to measure and manage human performance rather than to investigate financial performance (McLean 2009), or they may focus on labor control as the principal means to maximize profit and sustain the payment of conspicuous dividends to shareholders

(Irvine 2012). As a result, agricultural accounting can be used as “a technique of socio-political management for the exercise of power under the cloak of objectivity and neutrality” (Hooks and Stewart 2011, 49). This “dark side” of accounting (Fleischman 2004) has inspired research on the culpability of accounting in the perpetration of oppression and racism on colonial plantations, where accounting practices were used to commodify human life and treat human beings as livestock (Fleischman and Tyson 2000, 2004; Fleischman, Oldroyd, and Tyson 2004; Tyson and Davie 2009; Hollister and Schultz 2010; Dyball and Rooney 2012; Tyson, Fleischman, and Oldroyd 2004; Oldroyd et al. 2008).

Accounting in the socio-economic context of agriculture has also been analyzed in connection with capitalism. Within this domain, Bryer (1994) argued that in feudal settings a charge and discharge system was adequate, as it could directly measure the surplus the feudal lord was entitled to receive and could be used to manage production relations. Nevertheless, with the rise of capitalism and the evolution of labor relationships (from servitude to salaried labor), landowners arguably needed more information, including ways to measure their profits and the rate of return on their investments, hence double-entry bookkeeping started to spread (Bryer 2006). The capitalist, seeking high returns on capital employed and needing to visualize surpluses, which took the form of unpaid labor, started to appreciate the advantages of balance sheets and profit and loss accounts (Bryer 2005). In the context of agricultural capitalism, accounting has therefore also been seen as a technology that is more about discipline and adjudication than calculation (Hooper and Pratt 1993).

Despite these remarkable contributions, more is to be known on the role that accounting can play in the agricultural domain, in relation to the socio-economic context in which it operates and beyond its traditional function of promoting efficiency and rational decision making. To this end, the function of accounting as a territorializing, mediating, adjudicating, and subjectivizing tool can be explored in the light of Miller and Power's (2013) comprehensive analysis of the roles that calculative practices can play in organizations and society.

III. ACCOUNTING FOR TERRITORIALIZING, MEDIATING, ADJUDICATING, AND SUBJECTIVIZING

The present study conceives accounting as a social and institutional practice. In this view, accounting cannot be regarded merely as a neutral technique but is a quintessential interventionary technology (Burchell, Clubb, Hopwood, Hughes, and Nahapiet 1980; Hopwood 1983, 1987; Miller, Hopper, and Laughlin 1991; Carnegie and Napier 1996; Chapman, Cooper, and Miller 2009; Robson 1992; Walker 2016). Therefore, attention needs to be “directed to the ways in which accounting exerts an influence on, and in turn, is influenced by, a multiplicity of agents, agencies, institutions and processes” (Miller 1994, 1). Accounting includes different written techniques that can be employed not only to set economic norms or standards of efficiency, to calculate profits, gains, and margins, but also to exercise disciplinary power and exert influence over the economy and society (Hoskin and Macve 1986, 1988; Miller and Rose 1990; Miller and Napier 1993). Taking this broad view of accounting, Miller and Power (2013) investigate its organizing and economizing role, highlighting how it can play four key functions in organizations. Accounting can therefore be a tool for territorializing calculative spaces and actors, mediating their aspirations and interests in a common arena, adjudicating performances by means of measurement tools, and subjecting individuals to penetrating control (Miller and Power 2013).

When seen as a *territorializing* practice, calculative devices presuppose and recursively construct the calculable spaces that actors inhabit within organizations and society (Miller and Power 2013, 561). Not only do calculative devices transform the possibilities for personhood, but they construct the physical and abstract calculable spaces that individuals inhabit within organizations or society. Consequently, a focus on accounting as a “territorializing” practice underlies the links between calculating and governing, making the object of governing visible and thus amenable to action (Mennicken and Miller 2012, 4). In this sense, the “territories” of accounting include physical space or abstract objects of calculation in the form of a particular product line, a department, a legal entity, or a collection of such entities (Miller and Power 2013, 579). Accounting as a *mediating* practice links different actors with a common narrative and may constitute a network of relations, bound together by a common language (Miller and Power 2013, 581). Accounting helps to combine different interests, to respond to external influences, to create or enforce social relations within the organization, and sometimes to influence the organization itself or society at large. Such a mediating role reveals how accounting, organizations, and institutions are mutually dependent and influence each other (Hopwood 1983; Miller 1994).

The *adjudicating* role of accounting rests on the large series of metrics, methods, measures, and procedures that it produces to evaluate the performance of individuals and organizations (Miller and Power 2013, 562). In particular, the “focus is on the adjudicatory qualities of accounting as such which make these activities possible” (Miller and Power 2013, 584). Thus, “adjudication” implies activities such as collecting, sorting, processing, presenting, and comparing data, and organizing them either according to a bookkeeping method (single entry, double entry) or following other logics and forms such as tables, calculation sheets, ratios, and statistics (Robson 1992; Miller and Napier 1993; Miller and Power 2013). Finally, the role of accounting in *subjectivizing* refers to the practices of control, namely the possibility of an individual to be monitored by another (Miller and Power 2013, 563). The crucial issue is how accounting is involved in supporting, constructing, and manipulating

people in order to enable different kinds of control at a distance by reference to financial norms or standards (Miller and O'Leary 1987). Thus, accounting is important not simply for its metrics or accuracy, but also for the way it can actually influence the behavior of individuals and groups by forcing them to measure themselves against a set standard and hence ensuring their behavior is consistent with the interests of those who set the standard, whether they are managers, the government, or even a landowner (Hopwood 1987; Robson 1992; Armstrong 1994).

The way in which the four roles are actually designed, implemented, modified, mutually related, and adapted varies according to the social, institutional, and economic contexts in which accounting tools are mobilized. As a result, a careful analysis of the socio-historical setting in which accounting operates is critical (Hopwood 1983, 1987; Walker 2008; Napier 2009; Carnegie 2014). The Sambiase landed estates provide an interesting scenario to investigate the roles of accounting in an agricultural context and in a pre-industrial setting. The Sambiase case was characterized by unique social, institutional, and economic norms and practices. The importance of the territory to the Bourbon State, the predominance of feudal institutions and settings, the absence of a structured form of agricultural capitalism, the presence of employees together with serfs, the limited exchanges on the market, and the need to monitor the landowner's stewards and agents influenced and were influenced by the new accounting system envisaged by Tommaso Domenico Breglia.

IV. THE HISTORICAL CONTEXT AND THE SAMBIASE FAMILY

Social and Institutional Context

In the early 18th century Calabria, the southernmost region of mainland Italy, along with all of Southern Italy, witnessed a shift from the Austrian rule to the Bourbon rule with the enthronement of Charles of Bourbon in 1735 (Placania 1999, 237). The area was characterized by the coexistence of feudal and proto-industrial traits (Musi 2007) and by the slow transition from a "natural economy" to a "money economy," that is, from serf to wage-earning labor (Sweezy and Dobb 1950). In the Kingdom of Naples and Sicily, and especially in Calabria, the economy was still based on feudal institutions (Calabretta and Pace 1996; Covino 2013, 29). In this setting, the landowner held substantial authority and power within his lands, so much so that he was almost regarded as their undisputed ruler. Public order and justice were under his jurisdiction (Delille 1977; Massafra 1988; Astarita 2002). Not only did he hold power as the owner of the estates and attend to their administration and organization, he also exercised delegated public powers on behalf of the state (Caridi 2001; Covino 2013).

With the advent of the Bourbon family, reforms were initiated with the aim of modernizing the social and economic order of the feudal areas of Southern Italy. One of the most important was the cadastral survey promoted by Charles of Bourbon in 1740 (Plutino 2001, 37). The cadastral survey replaced the two preexisting ways of taxation. The first aimed at taxing agricultural production and subsequent consumption, whereas the second required a complex and subjective evaluation to be carried out by a public servant of all properties and related revenues in the area (Bedini 2013, 11–12). The cadastral survey aimed at rationalizing the state's tax system, as it answered the need to align the different local tax systems by imposing a new, homogeneous system throughout the Bourbon state (De Lorenzo 2007, 57). Another important aim of the reform was tackling tax evasion (Bedini 2013, 87; De Lorenzo 2007, 56) and ensuring that feudal lords and the members of the clergy, who had traditionally enjoyed exemptions, also could be taxed (Bedini 2013, 87; De Lorenzo 2007, 48–49). Therefore, the reform allowed a more equitable distribution of the tax burden across the different social classes. The new system was grounded in a census from which a specific register was drawn up, recording the names of those owning immovable properties in each city. Each city divided the taxpayers into eight categories depending on whether they were residents or foreigners, ecclesiastical or lay. All taxpayers were expected to declare the annual revenue generated by their properties (Villani 1952, 7–8). As a result, the reform also enabled the state to gather detailed demographic and financial information on the local communities in the kingdom (De Lorenzo 2007, 57). The register allowed the city (and the state) to know the inhabitants and the categories to which they belonged, and the annual revenue for each category, which enabled the calculation of the tax due (Cervellino 1756; Villani 1952, 12).²

The Sambiase Family

The Sambiase family was one of the richest and most influential landowners in Calabria in the 18th century. The family, which had a very ancient origin, managed to expand their feudal possessions at the end of the 17th century³ (Pellicano Castagna

² The head of each household (or each unmarried woman, widow, or member of the clergy) was expected to draw up the so-called *rivela* in which they declared the composition of the household and the properties they owned, together with any related revenues and rights. This information enabled the calculation of the income of each household in *ducati*, *carlini*, and *grana*, the currencies in use in the kingdom. This amount was then turned into *once* (one *uncia* was the equivalent of six *ducati*). The amount of *once* represented the tax base on which the tax was levied by each city.

³ The princes were the descendants of the powerful Sanseverino family, one of the most illustrious and ancient families of the Kingdom of Naples. The family changed its name under Ruggero Sanseverino, who took the name from the feudal estate of St. Biase in Calabria, circa 1120 (Pellicano Castagna 1984).

FIGURE 1
A Map of the Sambiase Family's Estates in the Province of Cosenza



The full-color version of Figure 1 is available for download, see Appendix A.

1984), extending their influence over ten territories: Castrovillari, Calopezzati, Crosia, Caloveto, Pietrapaola, Mandatoriccio, Campana, Bocchigliero, the village of Cariati, and the farm of Terravecchia (Covino 2004, see Figure 1). Prince Giuseppe Domenico Sambiase, born in Calopezzati on August 4, 1709, was appointed Grandee of Spain in 1724⁴ and took possession of the family estates in 1726 after the death of his father. Sambiase ran the estates for almost 50 years (Alfano 1795). He managed to improve the internal organization of his properties by implementing a new accounting and supervisory system, supported by his newly appointed advisor and accountant Tommaso Domenico Breglia. Moreover, he successfully extended the geographical reach of the commercial exchanges of his house through a greater development of trades with the cities of Naples, Salerno, and Bari. Sambiase died on February 9, 1776 (Di Vasto 1995, 219).

Different types of agricultural products were produced on Sambiase's estates, including wheat, silk, olive oil, wine, manna, pitch, barley, chickpeas, broad beans, and lentils. Animal farming was also important, with the breeding of sheep, pigs, oxen, and horses. Sales of agricultural products, and also livestock or related produce such as meat, wool, and milk, represented the main source of revenue of the estates (Delille 1977; Di Bella 1979). Above all, the trade of olive oil, wheat, and wool with Naples and cities outside the kingdom was extremely intense (Table 1).

The lord was not directly involved in the day-to-day operations of his lands, but oversaw the overall management of the properties. He could count on a thick web of officials that played different roles and reported to him (Napolillo 2013). At the head of the people working on each estate was the *agente generale* (steward), who was the representative of the lord and was entrusted with the duty to oversee the affairs on the properties under his care. He was expected to report frequently to the lord on the activity performed on the estate and share with him all the decisions he made (Covino 2004, 120). The *agente generale* was also directly involved in hiring and replacing workers (ASC 1752a) and in controlling the activity performed by farmers and breeders, also by checking the inventories of livestock (Covino 2013, 303). The *erario* (treasurer) was another important official who was responsible for the financial management of the estate. His main duty was to ensure the prompt collection of revenue and the payment of expenses (APC 1759).

On each estate the accounts were kept by a *scritturale* (scribe) and a *razionale* (bookkeeper), who were to keep, among the others, a ledger, a cash book, a journal, and a wageworkers' book and draw up the year-end financial statements (ASC 1752a).

⁴ The title of Grandee of Spain was second only to the title of Infant of Spain, which was given to the king's son. However, the title gave simply symbolic benefits that underlined the familiarity with the king. For example, the Grandees of Spain were to be treated as the king's cousins and could have been appointed as officers in the army during a war (Sacco 1796; Pellicano Castagna 1984).

TABLE 1
Estates and Businesses of the Sambiasi Family

Estates	Main Activities
Crosia	Growing of olives, grains
Cariati	Fishing, growing of wheat, animal breeding, pitch and clay-making
Campana	Production of wine, oil and honey, breeding of pigs
Terravecchia	Production of wine, oil and honey, breeding of pigs
Bocchigliero	Production of chestnuts and acorns
Castrovillari	Textiles, wool products
Calopezzati	Growing of wheat and production of olive oil
Caloveto	Growing of pomegranates
Pietrapaola	Wine making
Mandatoriccio	Wine making

Source: Alfano (1795, 77–91).

They enjoyed little autonomy, as entries in each book were to be made with the approval of the *agente generale*, who also audited the accounts before they were sent to the lord (Covino 2004, 116). These accounts were an important means for the distant lord to control the activity performed on his behalf by the estate officials and to recommend corrective actions as he saw fit (Covino 2004, 206–207). The *razionale* was also the *trait d'union* between the estate officials and the workers. He not only was involved in the productive activities of the estate, but was also expected to have accounting knowledge to help the *scritturale* in the keeping of accounts and in discharging duties on his behalf (Breglia 1751, 31).

As far as the productive activities were concerned, the *fattore di campagna* (chief farmer) was responsible for the overall farming operations and was also involved in the hiring of seasonal workers (Covino 2013, 312), whereas the *conservatori* and the *magazzinieri* (warehouse workers) were expected to manage the warehouses and ensure the preservation of their content (ASC 1751; ASC 1752b). The multitude of *coloni* (farmers) and *custodi* (breeders) in each estate ensured the cultivation of lands and animal breeding, respectively (Breglia 1751, 54–58).

V. CALCULATIVE DEVICES ON SAMBIASE'S LANDED ESTATES

Consistent with Miller and Power's (2013) conception of the functions of accounting within an organization, the sections that follow provide a holistic investigation of roles accounting can play in the agricultural domain beyond its traditional function of promoting efficiency. This will be achieved through an analysis of Sambiasi's landed estates from 1726 to 1776, when Prince Giuseppe Domenico ruled his lands and brought about a reform of their accounting system, developed by Tommaso Domenico Breglia.

Territorializing

In terms of *territorializing*, accounting creates the calculable spaces that actors inhabit within organizations and society (Miller and Power 2013, 561). In the context of Sambiasi's landed estates, the space of calculation was related to the main agricultural and pastoral activities performed thereon. As a result, accounting was important in turning farms and herds into calculable objects. A key tool in achieving this aim was the book of properties. If the landowner was to successfully manage his properties, he should have been able at least to know in detail their location and characteristics, even before investigating their efficiency or productivity. Consistently, the book of properties provided a quite detailed description of all the lands belonging to Sambiasi, including a clear definition of their boundaries. In particular, a specific section was created for each property, indicating its geographical location and value (APC 1741). The book also reported the annual revenue related to each estate (APC 1741). The calculation of the annual revenue for each property considered both the earnings related to the rental of orchards and of grazing and cultivable land, and the revenue coming from the sale of the estate's products. Another tool for territorializing whose function was connected to that of the book of properties was the inventory book. This inventory focused specifically on Sambiasi's herd, making clear the number and typology of animals located on each land, together with the name of those who were responsible for looking after them (APC 1741). This enabled the determination of any increases or decreases in the estates' livestock, making them clearly visible to the landowner. These documents were therefore an invaluable aid in "making calculable and visible in a specific way what was previously incalculable" (Miller and Power 2013, 580).

TABLE 2
A Page from the Journal, 1757

January 16, 1757	
Total amount of December	378,379
Tommaso Vioto has to pay 0.50 ducats	0,5
Wageworkers have to pay 1.80	1,8
Tiberio De Luca had to pay 12, payed in cash	12
Sundry expenses—85—offers to the Blessed Virgin Mary	0,85
Charity paid in cash to a cleric	0,7
Antonio Capasso had to pay—6 paid in cash	6
Warehouse expenses to be paid 5.46 . . .	5,46
Total	409,189

Source: APC (1757).

The use of accounts such as “Flocks,” “Cattle,” or “Farms” (APC 1737a), which reported, in the debit section, all the costs related to animals or to the farming activity and, in the credit section, the revenues from the sale of animals and crops (APC 1744a), was a further tool to enable the visualization of critical economic units, which were rendered into “something for which costs, revenues, and their risks, can be defined and calculated, something around which an ‘envelope’ can be drawn, and of which financial calculations can be made” (Miller and Power 2013, 562). In these accounts costs and revenues, consumptions and returns, agricultural produce, and all kind of biological assets were accounted for and measured (APC 1737b). The accounts were therefore important in objectifying herds and farms and making them visible and calculable (Miller and Power 2013; Miller and O’Leary 1987). They were rendered into accounting objects for which information could have been gathered in the form of related costs and revenues, which not only enabled the calculation of any profit or losses, but ensured that the landowner could have a clear understanding of where and how the activities performed in his interest were taking place.

Adjudicating

The *adjudicating* role of accounting is related to the practices implemented to evaluate the performance of individuals and organizations and is based on the “qualities” of accounting in classifying, counting, enumerating, summarizing, and comparing data (Miller and Power 2013, 584). The performance of Sambiasse’s landed estates was difficult to measure because of the organization of production within farms and the wide array of pastoral and agricultural activities performed thereon (Massafra 1988; Renzo 1997). This prompted Sambiasse, with the invaluable help of his advisor Breglia, to implement a new accounting system based on double entries, which was seen as critical to provide a systematic view of the activities and performance of the prince’s large estates. Consistently, a journal and a ledger were introduced. The day, month, and year of the transaction were reported on every page of the journal (Table 2). The running totals from the previous month were written at the top, before each record. The journal was the book in which any transaction associated with the ledger’s entries was recorded daily.

All of the amounts that came from the journal had to be recorded in the ledger. In particular, as shown in Table 3, a fraction was included on the left-hand side of the page to track all the figures from the journal to the ledger. The numerator of the fraction stood for the debit account, while the denominator indicated the credit account.

The essential criterion used in the drawing up of these books was proprietorship, and the so-called “nominal accounts” or “economic accounts” were used. Duality in the two-sided form of the account, the use of both a ledger and a journal, and the double posting of each transaction reveal that the double-entry method was adopted, according to the “historical standards generally accepted” at the time (Littleton 1933; Bryer 1994; Edwards 2011), which were nevertheless an innovation in the area in which Sambiasse’s properties were located. Daily activities could therefore be kept under control, helping to spread an understanding of the importance of sedulously keeping track of costs and revenues and diffusing a new language that reinforced the need to achieve efficiency (Miller and Power 2013), which had not been a priority in the past when unreliable and heterogeneous accounts were kept.

At the end of each year, all the accounts opened in the ledger were summarized in two closing accounts: the *Bilancio del libro* (balance sheet) and the *Rendite generali* (statement of profit and loss). Both accounts derived directly from the balancing-off of the accounts in the ledger and covered an accounting period of one year. All the accounts opened for receivables and payables, cash, and fixed assets were recorded in the balance sheet, while capital interests and all the revenues from lands were

TABLE 3
A Page from the Ledger

Saverio Calà di Calopezzati

		Debit		Credit	
348/154	Have to pay 200 ducats given in his favor of Sir Francesco Di Napoli with my insurance exchange	200	275/348	390 ducats paid in cash February 1	390
248/157	Have to pay 300 ducats with our insurance exchange payable on demand	300	346/348	99 ducats committed on our behalf	99
248/157	Have to pay 33 ducats with our insurance exchange payable on demand	33	346/348	44 ducats committed on our behalf	44
	Total	533		Total	533

Source: APC (1744a).

recorded in the profit and loss account. The balance in the statement of profit and loss was then carried to the balance sheet (Table 4).

The profit and loss statement (Table 5) matched revenues and costs for a year, and therefore accruals and prepayments were reported, consistent with the most advanced practices of the time (Oldroyd 1999). Although the balance sheet reported the value of lands and buildings, these assets were not depreciated. There is no evidence of the use of profit for the calculation or distribution of dividends.

The double-entry bookkeeping system played a fundamental role in the evaluation of the *agente generale* and in ensuring that his actions had been consistent with the preservation of assets (Covino 2013, 300–302). In this sense, the accounting system was necessary as a performance measurement tool and as a basis for evaluation and accountability (Miller and Power 2013, 583). Prince Sambiasi was sent the accounting books by his *scritturali* and could hence review them, which ensured the achievement of “accountability and transparency” and made “the whole organization and the agents’ activities ‘auditable,’” even from a distance (Miller and Power 2013, 584).

On Sambiasi’s landed estates, account books enabled the measurement of harvests, livestock, and all related produce (eggs, meat, wool, and skins) in monetary terms and made them visible and comparable over time. Double-entry bookkeeping was a sophisticated form of enumerating, classifying, and measuring outflows and inflows of cash, costs and revenues, assets, and liabilities. It was used to create a language and procedures that operated in a context characterized by the absence of a

TABLE 4
Balance Sheet as at August 31, 1745

On August 31, the Following Accounts Remain Debtors		On August 31, the Following Accounts Remain Creditors	
Our lands located in Mandatoriccio	119,980	Ownership of our house	546,281
Our lands located in Calopezzati	42,000	Other creditors	12,349
Grain	1,680	Dowry of the Princess Eleonora Caracciolo	84,000
Wine	1,050	General revenues	42,834
Oil	1,400		
Wool	952		
Oxen and sheep	665		
For Fabrizio Donato	7,000		
For Mr. Prince of Pietrapaola	378,000		
For sheep kept on our behalf by Ferdinando D.	16,442		
For Mr. Duke Michele D.	99,400		
Cash	16,895		
Total	685,464	Total	685,464

Source: APC (1745).

TABLE 5
Statement of Profit and Loss for the Year Ended August 31, 1745

On August 31, the Following Accounts Remain Debtors		On August 31, the Following Accounts Remain Creditors	
Mr. Raimondo Lettieri	630	Mr. Piero Manzo	560
Balance to be carried to the balance sheet	42,834	Mr. Nicola Sabatino	39,257
Total	43,464	Other profits	3,647
		Total	43,464

Source: APC (1744a).

capitalist mode of production (Bryer 1994) and where serfdom and waged labor coexisted. Nevertheless, double entries were adopted earlier than in many other estates located in much more advanced countries (Napier 1991). Interestingly, financial statements were in the service of controlling the global performance of the prince's landed estates, providing information on the results of the overall activities performed on Sambiase's lands. The accounting system enabled also the calculation of revenues and costs for each farm (Covino 2013)⁵ but, regardless of the quite advanced accounting system in use, there is no evidence of any attempt to calculate the costs or profit from specific activities on a regular basis. It seems therefore, that accounting as tool for performance management was mostly based on physical objects and was more effective in providing the owner with a holistic view of the "rights and obligations" pertaining to him (Oldroyd 1999, 184), rather than in providing detailed information on specific activities or products.

Mediating

Accounting as a *mediating* practice brings together different social actors with different interests and may constitute or enforce a network of relations involving them (Miller and Power 2013, 581). In Sambiase's landed estates, accounting practices helped to promote a new understanding of the way the estates were to be run and to mediate the relationship with interested parties. On Sambiase's feudal farms three main stakeholders emerged—the landowner, the workers, and officials and the state.

Accounting played an important role in determining how productive surplus had to be divided between the landlord and the state on the one hand, and between the former and the laborers on the other hand (Assante 1964; Covino 2013). As it will also be documented in the next section, simple accounting tools were used to guide the apportionment of crops between laborers and the landlord, representing a straightforward means to mediate between them. This enabled the lord to demonstrate how the division of the output from production was based on a clear and predetermined basis and hence made his decisions look objective, although they mainly promoted the prince's own interests (Farjaudon and Morales 2013; Hooks and Stewart 2011). At the same time, accounting was a means that enabled a productive interrelation and the discharge of accountability between the lord and his officers, most especially the *agente generale* to which the management of the estate was entrusted. Through the accounts, Prince Sambiase was able to understand how his estates were run and to engage with the *agente generale* on how to improve the operations at the estates. Accounting also enabled dialog and the creation of a hierarchical relation between the *agente generale* and those in charge of the bookkeeping function, namely the *scritturale* and the *razionale*, when the former was responsible for auditing the latter's accounts to avoid any error or the opportunity for fraud. In this sense, accounting played a fundamental function in linking up "different actors with a common narrative constituting a network of relations within the organization" (Miller and Power 2013, 581).

Accounting records were a critical mediating tool in the context of the relationship between Sambiase and the state. As a grandee and a member of one of the most important families in the kingdom, keeping a healthy relationship with the state was critical to his influence and standing. The cadastral survey initiated by Charles of Bourbon in 1740 represented an important step in the king's attempt to modernize his state by means of a more efficient and fairer tax collection (Plutino 2001), and the support of noble families was therefore expected (Cervellino 1756; Barionovi 1983; Valente 1983). As a result, a clear understanding of the revenue generated from his properties was important in the calculation of the exact amount of tax owed, since every year all landowners were required to submit a statement in which individual properties and annual revenue were indicated (Plutino 2001, 38). As the documents show, Sambiase provided information about fixed assets such as vineyards,

⁵ Unfortunately, surviving records do not allow a clear understanding of the relationship between the accounts kept for each farm and the calculation of the overall amounts for the whole of the prince's landed estates.

TABLE 6
A Page from the Wageworkers' Book

Salaried Workers' Wages		
May 1744	Pay of the Provvisionati	
	Raffaele Musso	5,2
	Gaetano Russo	1,3
	Giovanni Perri	1,3
Total		7,8
June 1744	Ignazio Mayer	3,66
	Francesco Zamburro	2,43
	Raimondo Lettieri	1,35
	Pasquale Musto	2,43
	Gaetano Busto	1,55
	Gaetano Amato	4,1
	Andrea Graziano	2,2
	Giuseppe Foglio	3,9
	Giuseppe Esposito	2
	Gaetano Russo	1,83
Total		25,45

Source: APC (1744b).

olive groves, lands, and animals owned, to which purpose the book of property was essential (ASN 1743). In particular, the cadastral survey shows that Prince Sambiasi had properties and revenue for 4,000 ducats for the year 1743 (ASN 1743). Accounting as a mediating tool enabled a meaningful and reliable dialog with the state, one in which Sambiasi could demonstrate his commitment and contributions to the economy of the kingdom, thus helping him to preserve his social standing.

Subjectivizing

The role of accounting in *subjectivizing* people refers to the practices of control over individuals. Accounting makes individuals comparable and calculable and induces them to self-regulate their behavior (Miller and Power 2013, 563). On Sambiasi's landed estates, crops and breeding were generally labor intensive and involved low levels of capital investment (Massafra 1988; Renzo 1997). Since labor was the crucial factor of production, special calculative devices were adopted to control and boost labor productivity. Workers were divided into serfs and free laborers. Serfs were a particular category of laborers, bounded to the land. They had to pay rent to the landowner to cultivate the lands they occupied, and could retain part of the harvest on a piecework basis (Lepre 1963; Pace 1992). Free laborers were hired by the *fattore di campagna* as needed and received a salary for their work (Lepre 1979; Russo 1996). Nevertheless, to ensure that all workers had an incentive to work as hard as they could, they were entitled to a share of the output produced on the estates—serfs and waged workers alike. The effects of the sharing of output were recorded in the account "Crops." In particular, its debit section reported the costs associated with agricultural production, including the amounts paid in cash or in kind to laborers and serfs and the share apportioned to the lord for self-consumption (Breglia 1751, 126).

Accounting on Sambiasi's estates was mobilized to make free laborers visible and thus controllable. A specific book was kept for this purpose, the *Libro dei salariati* (wageworkers' book, Table 6), which reported for each month of the year the names and salaries of hired free laborers. Also included in the book were specific accounts in the name of each worker, stating the wages due for the work done, the amount paid, and any balance owing.

Their pay was defined *ex ante* based on an *a priori* estimate of the time needed to perform their allocated tasks. Thus, wages were proportional to the estimated time to be worked, not to the output (Russo 1996). The landowner sought to turn such payment to his own advantage, since at first the time needed to complete the allocated tasks was always underestimated, so the wage he paid was lower than that he would have had to pay for the work actually completed (Covino 2013). The recording of detailed information on each laborer and the calculation of the time needed to perform certain tasks represented a technique of surveillance that sought to establish production norms and to hold the worker accountable for the use of his time and for his work (Hooper and Pratt 1993). Nevertheless, if this system succeeded in enabling the landowner to make visible and

FIGURE 2
The Surviving “Wooden Rods”



accountable those who received a salary for their work and in ensuring that a certain amount of output could be attained, it provided little incentive to the workers since any extra hour worked to achieve the agreed output would have not been paid (Assante 1964). If accounting provided the means to intervene in the workers' individual choices (Miller and Power 2013), this was not necessarily in the best interest of the landowner as the technology employed seemed to have been loosely coupled with its overarching goal, failing to fully realize its economic aim (Bromley and Powell 2012).

Inventories were another means to monitor the behavior and dedication of workers. Every breeder was held responsible for taking care of his herd and his work was monitored through inventories, drawn up at the stables at regular intervals (Assante 1964). The latest inventory provided information on the existing number of animals at the beginning of the period when they had been entrusted to the breeder, divided by typology. The number of animals born since the last inventory was added, whereas that of those sold or slaughtered was subtracted. The resulting figure should have been equal to that of the animals still under the care of the breeder at the date when the new inventory was drawn up. If this was not the case, the breeder would have been called to account for any differences, which put any privileges granted by the lord at risk, since the person in charge had breached the bond of loyalty that tied them together. In the most serious cases, the offender would have been subject to the prince's civil and criminal justice (Ratto 1909). Therefore, through a simple written technique such as an inventory, which could have been easily stored and compared against others without any complex calculation, the distant landowner was able to subject his workers to an effective form of control, therefore discouraging any defiant behavior (Miller and Power 2013).

Farming was more difficult to oversee since it involved multiple tasks, such as ploughing, sowing, and harvesting, which were to be performed at different times of the year and in very large areas (Napolillo 2013). Harvesting was critical, as it was the most labor-intensive phase and offered an opportunity for misappropriation of products (Pace 1988). Harvesting was monitored through a basic instrument, which was very easy to use, reasonably reliable in measuring quantities of products to be allocated to the worker and to the house, and understandable even by illiterate farmers, laborers, or *fattori di campagna* (Parker and Meehan 1999; Stone 1975, 52). This was the so-called *spruoccolo taccheriato* (wooden rod, Figure 2).

Wooden rods served a double purpose (Pace 2014). First, they were used to measure how much produce was harvested by each laborer. Each laborer was allocated a specific area or set of fruit trees. First thing in the morning, every laborer was given a basket he had to fill with the harvest. At the end of the day, the wooden rod was put into the baskets to see how deep its

contents were. Once measured, the contents of each basket were split into two parts: the part that was as high as the rod was retained by the *fattore di campagna*, representing the minimum amount the lord was entitled to receive, while anything in excess of such part was given back to the harvester as the payment in kind for his work. This kind of payment was clearly used only for serfs (Pace 2014). This represented a very simple technique used for the purpose of monitoring serfs and influencing their behavior. The use of wooden rods therefore encouraged them to boost yields because they would have been given the part in excess of the minimum required by the prince for each basket they were able to fill (Pace 2014). Moreover, the desired performance could have been increased simply by using a longer rod. These apparently rudimentary accounting tools entailed the possibility of subjecting an individual to control or regulation by another, but also entailed “the presumption of an individual that is free to choose, indeed obliged to choose, albeit within parameters set by various financial calculations and norms” (Miller and Power 2013, 593).

Wooden rods were also tools that helped to keep track of payables and receivables arising in the relationship between the feudal estate and the laborers. When a payment was made on behalf of the prince, either in cash or in kind, by those in charge of supervising the laborers, the wooden rods were used as a receipt. When the payment was made, the rod was cut in two halves, one to be left with the payee, the other to be given to the payer. At regular intervals, all the sticks in the hands of those who made payments on behalf of the prince were sent to the *scritturale* as evidence of the payments made to the laborers (Assante 1964; Pace 2016). Therefore, these wooden rods were used both as a performance indicator and as a standard that laborers had to meet, while also being proof of the payments made to the laborer.⁶

VI. CONCLUSIONS

Studies of the history of accountancy within the agricultural field have mostly focused on Anglo-Saxon contexts, seeking to document the accounting techniques in use on large estates over time or to investigate the rise of early modern practices. Less is known on the function that accounting can play in the agricultural domain in relation to its socio-economic context. The paper has started to address this gap by analyzing the roles accounting played on the landed estates of one of the most important noble families in Southern Italy in the mid-18th century. The paper adds evidence from an Italian context by analyzing the roles accounting played on Sambiasi’s family’s landed estates from a historical perspective and in the light of Miller and Power’s (2013) discussion of the four key functions that accounting can have in different social and institutional contexts: territorializing, mediating, adjudicating, and subjectivizing. On Sambiasi’s landed estates, all of these roles were played by an accounting system that combined different calculative devices, ranging from accounts, to property lists, to notched wooden rods. Sambiasi’s estates were located in one of the most backward areas of the peninsula, in which feudal and proto-industrial structures coexisted. Since he spent most of his life in Naples, quite far from his landed estates, Prince Sambiasi needed effective tools to control his properties from a distance. As a result, supported by his trusted advisor and accountant, Tommaso Domenico Breglia, he embarked upon a reform of the accounting system of his estates, with the aim of boosting their productivity and controlling the behavior of those who worked thereon.

Accounting was therefore a means of territorialization. By means of books of properties, inventories, and accounts opened for objects such as “Herds” or “Farms,” it provided assistance in turning the landed estates into an “economic space” and in objectifying herds and farms, enabling the accumulation of information about them and hence making them visible and calculable (Miller and Power 2013; Miller and O’Leary 1987). As far as the adjudicating function of accounting is concerned, through an innovative double-entry bookkeeping system Sambiasi was able to get an understanding of the overall performance of his estates and that of every single farm. Nevertheless, no specific calculations were made for activities and products, and no evidence of cost accounting was found, this suggesting how the landowner was more interested in a holistic view of the “rights and obligations” pertaining to him (Oldroyd 1999, 184). Accounting was also used to mediate the relationship between different local actors, including the state, to which Sambiasi owed most of his wealth and influence. By showing dedication in the calculation of taxes to be levied on his properties, Sambiasi ensured his contribution to the state’s overall economy was visible to the king. Accounting also facilitated the discharge of stewardship between the lord and his officials and enabled dialog and the creation of hierarchical relations between the officials themselves. As a subjectivizing practice, accounting, by means of wageworkers’ books and simple tools such as wooden rods, intervened in the behavior of each laborer to make it consistent with the aims of the landowner.

The limits of the paper are mainly due to the archival sources, as a complete series of accounts for one year is not available. At the same time, correspondence, minutes, and notes are completely missing from the archive. There are many potential

⁶ The use of tallies was not a prerogative of Southern Italy. Tallies were short wooden sticks on which notches were cut to represent numbers (Baxter 1989, 43). Tallies were often used as a form of receipt (Robert 1956, 76), most especially in medieval and modern Britain. In the 18th century, tallies were used in the issuing of public debt, especially during wartime (Robert 1956, 84). There is evidence of tallies being also used by the Vikings (Grandell 1977, 1985).

developments for research in this domain. First, there is a long list of feudal princes and lords, as well as upper-class figures who, in different Italian regions and over the centuries, have managed their farms and developed quite complicated accounting systems. Their personal archives are still completely unexplored. Moreover, an analysis of the textbooks devoted to accounting techniques for agricultural settings may be useful to appreciate whether and how the key beliefs of different socio-cultural contexts influenced accounting thought and to understand the role played by practitioners. Finally, with regard to the accounting practices adopted by 18th-century Italian farms and estates, it would be extremely useful to make international comparisons with the vast accounting history literature about England, from the perspective of comparative international accounting history (Carnegie and Napier 2002).

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APPENDIX A

aahj-10667_Figure 1: <http://dx.doi.org/10.2308/aahj-10667.s01>

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