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THE DOUBLE-ENTRY BOOKKEEPING METHOD APPLIED IN SPAIN TO ACCOUNT FOR TRANSACTIONS RELATED TO THE MINTING PROCESS OF GOLD AND SILVER IN THE SIXTEENTH CENTURY

Abstract: This paper represents a summary of broad research undertaken in the *Archivo General de Indias* of Seville. Gold and silver were shipped from America, received in the Treasury Room, minted, and sold in public auctions to merchants. Because single-entry was the usual accounting method applied by the *Casa de la Contratación de las Indias*, it was surprising to find several books which provide evidence of the application of the double-entry accounting method to account for those transactions related to the minting process. The purpose of this paper is to demonstrate that the documents related to the accounting procedures of the Casa treasury represent the earliest evidence found of the utilization of the double-entry method by a public institution.

The study concludes that the treasury utilized the double-entry bookkeeping procedure as early as 1555 to account for the transactions involved in the minting process of gold and silver. Although the focus of this research is on the period 1555-1600, this method was utilized until the middle of the 17th century. This paper examines the accounting procedures used to account for the sale of gold and silver during 1560.

INTRODUCTION

Under the auspices of the Bank of Spain, during 1991 this study analyzed the accounting documentation located in the Archive of the Indies. These documents pertained to the sales of the gold and silver brought from America that entered into the *Casa de la Contratación* of Sevilla (Casa hereafter). The goal of the Casa was to control and organize trade with America. Within this trade, gold and silver occupied a preferential position, playing a role whose relevance depended upon the frequently over-extended treasury and general economy of Spain.

The first discovery of this interesting documentation was made by Hernández-Esteve [1986] in his book dedicated to Pedro Luis de Torregrosa, who was an important figure in the sixteenth century and is considered to be the chief expert on the double-entry method of accounting in Spain during this period. Moreover, he was an important buyer of gold and silver in the second half of the sixteenth century. Esteve mentions the ledger books (*Libros de Caxa*) and the diary books (*Libros Manuales*) that correspond to the years 1555, 1557, 1558, and 1560, that the Casa used to account for the sales of the precious metals belonging to the crown.

It is possible that these books have passed through the hands of many other researchers, primarily those who have dedicated their work and efforts to discerning the quantity of gold and silver that Spain imported from the Indies during this time frame. Possibly Hamilton [1975], as Hernández-Esteve [1986, p. 59] notes, has used these books as well, but without realizing their significance in the history of accounting. Because they were not familiar with the double-entry method, other researchers of the history of economics may have committed the same error. The analysis of this documentation, as will become apparent, reveals the establishment of the double-entry book-keeping in the public sector forty years before its utilization by the central accounts of the Royal Treasury of Castilla in 1592.

A BRIEF DESCRIPTION OF THE LOCALIZED DOCUMENTATION

After reviewing the documented sources for all of the second half of the sixteenth century, the general index of the Archives of the Indies was investigated particularly the discovered separate part which was dedicated to the buyers of gold and silver. This included two subparts that, for the period of interest, contained the following files, all of which pertain to the section labeled *Contratación*.

First part: Under the general heading of *Libros de Cargo y Data* of the treasurership, the following files were found:

Years	File
1553-1567	4678
1554-1588	4679
1554-1579	4680
1557-1580	4681
1562-1588	4682
1576-1593	4683

1580-1599	4684
1585-1609	4685

The books about this part of the cargo had data files that were kept primarily using a single-entry form of bookkeeping. However, it was discovered that there existed an important quantity of diary books and ledger books which were kept in the pure style of the double-entry method practiced at this time.

Second part: In the general index of the archives, files were located under the generic name of "Buyers of gold and silver." These files outline the obligations and surety that the buyers had to fulfill. The gold and silver that they bought in the rough form from the treasury room was to be taken from and returned to the mint (Real Casa de la Moneda). Among these files, the following have been analyzed:

Years	File
1506-1609	4951
1507-1575	4955
1574-1592	4956
1557-1580	4681
1580-1600	4957

In this part, as well as in the previous one, the generic name does not correspond to the contents of all the files, but rather only to the first ones (4951). The rest of the files carry the title of "Books of the receipt and sale of gold, silver, and pearls that came from the Indies", and the contents of which include some ledger and diary books. Table 1 contains a summary of the information contained in these files.

As an example of the analyzed documentation, I have selected one of the clearest accounting processes found. Specifically, I chose the process corresponding to the sale of gold and silver that came for the King by way of Captain General Pedro de las Roelas in 1560. I have chosen this process for the following reasons:

First: As one can verify in Table 1 (file 4955), I have the complete documentation which includes: the books of sales, the diary or "manual", and the ledger or major book. The examination of these books is confined to the year 1560 and to the fleet that came that year under the command of Captain General Pedro de las Roelas.

Second: In this process, only the entries of gold, silver and *reales* (a type of coin) that came for the monarch were recorded. This made the selected process seem simple and more easily

TABLE 1
Documentation Analyzed from the General Archives of the Indies in Seville

File (<i>legajo</i>)	YEARS	"Cargo" and "data" books	Diary and ledger books	Other books
4678	1553 to 1567	"Cargo" and "data" books of the treasurer of the <i>Casa de la Contratación</i> (1553 to 1567)	—	—
4679	1554 to	"Cargo" and "data" book of the treasurer of the <i>Casa de la Contratación</i> (1557 to 1562)	Diary and ledger book of the sale of silver from the Guadalcanal and Aracena mines (1557 to 1588)	Book of the confiscation of gold and silver from the fleet that came in 1588
4680	1554 to 1579	"Cargo" and "data" book (1557 to 1559) Debit book of the sales of silver from Guadalcanal and Aracena (1562 to 1579)	Diary from 1555 to 1561	—
4681	1557 to 1580	—	Diary of 1557 Diary of 1558 to 1571 Ledger book from 1558 to 1563	Book of the receipt and sale of the silver of his majesty (1558 to 1559)
4682	1562 to 1588	"Cargo" and "data" book (1568 to 1569)	Ledger book from 1565 to 1579 Ledger book from 1563 to 1588 Diary from 1566 to 1577	—
4683	1576 to 1593	"Data" book (1578 to 1583)	Ledger book of 1567 Diary from 1577 to 1593 Ledger book from 1577 to 1593	—

File (<i>legajo</i>)	YEARS	"Cargo" and "data" books "Cargo" and "data" book	Diary and ledger books	Other books
4684	1580 to 1599	—	—	Entries of gold and silver that the <i>maestres of nao</i> declared. Entries of gold and silver that were sold by auction.
4685	1585 to 1609	—	Ledger book from 1585 to 1602 Ledger book from 1595 to 1609 Diary from 1593 to 1605	—
4951	1506 to 1629	—	—	Book of obligations and surety of the buyers of gold and silver (1506 to 1629)
4955	1507 to 1579	—	Diary of 1560 Ledger book of 1560 Diary book of 1563 Ledger book of 1566	Book of the sales of gold and silver in 1560 Book of the sales of gold and silver from 1563 to 1575
4956	1579 to 1592	—	—	Book of the receipt and sale of gold, silver, and pearls (1574 to 1592)
4957	1580 to 1600	—	—	Book of the receipt and sale of gold, silver, and pearls (1580 to 1600)

interpretable. This simplification does not occur in other processes. For example, in those that concern the treasures headed toward diverse destinations and in those sequestered by the monarch, a considerable number of accounts are necessary and the process is enormously complicated (e.g., the complete representation of the origin and destination of the treasures and the treatment of the debts of the monarch with the owners of the confiscated treasures).

Third: A set of identifiable and coordinated accounts are utilized in this process. This permits a simple and complete schematic representation of the accounting process appearing next to the personal accounts and the accounts of differential values or of results. This trait represents one of the essential characteristics of the double-entry accounting method.

CHARACTERISTICS OF THE ACCOUNTING METHOD USED

After the examination of the files, I concluded that the method used was, primarily, the double-entry accounting method commonly found in the practice of private business accounting at that time. It is interesting to note, however, that together with the principal books used in that method (diary and major), others such as the "cargo" and "data" books corresponding to the single-entry method were still kept. The reason is that these books served as auxiliaries to the treasurership: they contained exclusively numerary income and outcome, and were under control of the treasurer of the Casa.

PRINCIPAL BOOKS UTILIZED IN THE METHOD

There are four main books that I have identified in relation to the activity of the sale of precious metals:

- * "Cargo" and "data" book of the treasurer of the *Casa de la Contratación*: The "cargo" book registered the numerary input (principally for the sales of gold and silver). It was completed by a book of "data" or numerary output, whose titularity belonged to the treasurer of the Casa.
- * Silver and gold receipt and sales book: The content of this book was similar to the previous one. One exception was that in the silver and gold receipt and sales book, no debits were annotated and only the receipt and sales of the gold and silver were presented. It also contained, like the "cargo" book, all of the characteristics of the sales that were realized.

- * Diary book or “manual”: This was a book of the sale of gold and silver, but whose content for the most part goes beyond the exclusive representation of the transactions and the related operations. It usually represented, in a complete form, the last destination given to the treasures that were sold or not sold in public auction.
- * Ledger (major) book or *Libro de Caja*: in this book, they opened all of the accounts that appeared in the diary book, which permitted the control of its balances.

Next, I will briefly analyze the content of these books and observe the adaptation of the final two books to the double-entry accounting method.

“Cargo” and “Data” Book of the Treasurer of the Casa de la Contratación

This book was dedicated to annotating every numerary inflow and outflow. The treasurer, as his name indicates, was in charge of these entries, which originated from activities related to the sale of the gold and silver of the Royal Treasury.

For the purpose of this research, this book represents an “auxiliary of cash.” In a very detailed form, the book contained all the sales transactions for gold and silver that entered into the *Casa*. The treasurer was the only person in charge of registering the precious metals as they were received and, thus, the importance of this book lies in its being an instrument of essential control over the resources managed by the treasurer. When the book of Cargo was combined with the book of Data, the resulting balance was normally positive. This balance was obtained by taking the difference between all of the transactions recorded in the Cargo from all those annotated in the Data book. Whenever it was positive, the amount was transferred as a debit (cargo) to the following book of Cargo and Data. If it was negative, the treasure would have to clarify it.

Silver and Gold Receipt and Sales Book

It is similar to the “cargo” book of the treasurer of the Casa. The precious metals delivered to the Casa by the *maestres de naos* were subsequently sold to the merchants. The major difference between this book and the previous ones is that only the receipts and subsequent sales of the gold and silver were recorded in it, making no reference to the treasurer of the Casa.

Therefore, this book can be considered as only an auxiliary to the diary book, since all of the operations registered in the former were subsequently transferred to the latter.

Diary or Manual Book

It was in this book where the transactions derived from the sale of gold and silver were recorded chronologically until these metals were transformed into coin and again reverted back to the treasurer of the Casa. In order to clarify this, we have to point out that the goal of the buyers of gold and silver was to acquire these metals in public auction in accordance with the law established in the Indies, to be able to smelt the metals according to guidelines imposed by the crown for the coinage (11 *dineros y 4 granos* for silver and 22 carats for gold). The merchants were obliged to deliver the value of the acquired silver or gold to the treasurer of the mint, who then returned the coined money to the treasurer of the Casa.

The structure of the diary book, which is characteristic of the double-entry bookkeeping practiced in Spain during the sixteenth century, is shown in Figure 1. It represents a page of a diary book corresponding to the year 1560.¹

Each page of the diary was divided into three columns. In the first and narrowest column located on the far left, a type of fraction was recorded that indicated the pages of the ledger book where one could find the accounts that pertained to the transaction. The numerator of the fraction represented the page of the ledger book where one found the account that had been debited, and the denominator designated the page of the ledger where one could find the account that had been credited. These numbers did not represent, as they do in the present, a code indicative of a definitive account, but only the page of the ledger where one could find that account. In the example, we present in figures 1 and 2, the accounts correspond to the gold and silver merchants, Alvaro de Armenta and Martin Hernández de Mendoza. Both of these accounts can be found on page 211 in the ledger.

¹Several references are provided at the end of this paper, which will allow the interested reader to learn more about the double-entry bookkeeping method as it was utilized in Spain. Detailed explanations of the accounting practices as well as comparisons among several European countries, will be found among the contributions referred.

FIGURE 1

+103 le as.

Manual del oro y plata que vino para su mag. en la flota de que viene por gual p de las Hoelas este pason te año de 103 le as — y de las de las de los mercaderes de oro y plata. y lo q cada maestre entrego En. e. de abril 103 le as —

211. + Ho de armento. Se ve por gaspar Sanchez maestre de q. m. e. e. p. de le d. y mis. que son por 103 le d. y mis.

212. + alio de armento se ve por platin de sumas que tengo gas par Sanchez maestre de la p. i. o. n. i. e. t. a. firme. de q. m. e. e. p. de le d. y mis. que son por 103 le d. y mis. q. m. s. de plata q entrego el dho maestre en cinco barras de plata. de las que para su mag. traya hechas en parte de le m. d. e. e. p. de le d. y mis. e. e. p. de le d. y mis. y parte en q de las entrego. las qhas cinco lb. las quales se firmaron en el dho armento a. e. mis. por marco m. s. de la ley que trayan q montaron por las leyes. de q. m. e. e. p. de le d. y mis. y fabricados en 103 le d. y mis. de los dho. e. mis. m. s. de la ley. de los dho. de q. m. e. e. p. de le d. y mis. las quales he de entregar en el tes de la casa de la moneda. en 6. dho. en plata para en ala ley q se este libro en la dho. dho.

211. + Martin hernandez de mendosa de que vino dho plata. de q. m. e. e. p. de le d. y mis. que son por 103 le e. e. p. de le d. y mis. de plata que entrego el dho maestre en 6. lb. de las que para su mag. traya hechas en parte de le m. d. e. e. p. de le d. y mis. e. e. p. de le d. y mis. y parte en q de las entrego las quales se firmaron en el dho mendosa. a. e. mis. m. s. por marco de la ley que trayan. que por ellas montaron. de q. m. e. e. p. de le d. y mis. y fabricados en 103 le e. e. p. de le d. y mis. de los dho. e. mis. he de entregar en el tes de la casa de la moneda. a 6. dho. en plata puesta ala ley. como se en este libro en la dho. dho.

The second and widest column provided the detail. This constitutes what we call "the central body of the entry." With the passage of time, this part became more concise in its content. As one can see, the first thing represented in this central body was the date, centered at the top, with all the corresponding transactions being recorded immediately after it. Then, the following date was recorded in the same manner, i.e., at the center of this column. All entries began with the name of the account that was debited (i.e., Alvaro de Armenta) which could be found on the page of the ledger indicated by the numerator of the fraction in the first column (page 211). Next, the expres-

sion "owed for" was written, followed by the name of the account that was being credited (i.e., His Majesty's silver brought by Gaspar Sánchez, maestre of the province of Tierra Firme). This account could be found on the page of the ledger indicated by the denominator of the fraction (page 212). At the end of the entry, once all the characteristics of the transaction were described, the page of the book of sales (where the registered transaction was located) was indicated (page 2).

In the right column, the quantity of the transaction (in *maravedís*) was represented using the system of "Castilian Account." On the other hand, a quantity had been repeated in the central body using the same form of Roman and Arabic numeration, because a general norm of representation did not exist. The symbols corresponding to the Castilian Account were always included ("q", or "q°s", the symbol of the "quento/s" (million) and the "calderon", "U", symbol of a thousand). When a reference to pages of other books were made, it was always written in Arabic numerals.

Ledger Book or Libro de Caja

This book adopts the form of the Venetian accounting system which is characterized by opposing sections. In it, each account is represented by two facing pages, the left one dedicated to debits and the right one to the credits. In Figure 2, two pages of a ledger book are presented as an example that corresponds to the accounts that appeared in the diary book reproduced above. Specifically, the example contains the accounts of Alvaro de Armenta and Martin Hernández de Mendoza, gold and silver merchants, which can be found in the double folio number 211 in the ledger book.

The operations entered into the diary were transferred to the major book or ledger maintaining the chronological order of the entries. No reference to the corresponding entry in the diary was found in the entries of the ledger, since the transactions entered into it were not numbered. This fact made the diary seem, perhaps, of greater importance than the ledger. If, for any reason, the ledger were destroyed, it could be reconstructed by returning to the diary. If the situation were reversed, however, a reconstruction of the diary would entail much greater difficulty. If one made reference to the diary each time an entry was made, it was to the folio of this same book where one found the balancing entry.

This was mentioned at the end of each registry. Thus, as seen in Figure 2, the purchase of silver made by Alvara de Armenta mentioned earlier is annotated in his account (folio 211) on the left or debit side, where it is represented in the following terms:

— 1560 —

211// Alvaro de Armenta debe en 10 de Abril 5 qos 439
U 166 mrs. por 50 barras de plata que pesaron
2.777 mcos. 4 onz. 4 och. de plata que montaron
rebatidos 27.776 mrs. por 10 mrs. por marco
menos de la ley como aparece en este a folio 212

V qosCCCCXXXIXUCLXVI

— 1560 —

211/ Alvaro de Armenta owes on the 10th of April 5
qos 439 U 166 mrs. for 50 silver slabs weighing 2
U 777 mark, 4 oz., 4 och. of silver sold to him. As
you can see in this book on page 212

V qosCCCCXXXIXUCLXVI

Each page of the ledger begins with a reference to the year in which the entry was made, located in the top center part of the page. The structure of this book is in accordance with the double-entry accounting method. One finds each page divided into three columns:

The first column represents a simple margin where some symbols indicative of the control of its entries were recorded as well as the years, which were entered consecutively.

The second column constitutes the central body of the entry where the transactions corresponding to the diary were recorded. The entry indicated the day and month of their realization in a way such that if more than one entry occurred on the same date, it was replaced by the expression "on this day". If only the month coincided, the day was noted and then followed by the words "of it." When a different year passed, this was indicated, as we have already said, in the left margin. Here, the explanation of each operation was shorter than in the diary, and, normally, the quantities stated in the central body were written in the Castilian ac-

count method but using the Arabic numerations. At the end of the diary and in a type of right angle, the folio of this book was presented indicating where to find the balancing entry.

The third column was divided, as that in the diary, into sub-columns because it facilitated its summation. It was reserved for the quantities which were always expressed in the Castilian style of accounts with Roman numbers, using the Calderon sign (U) located in the center in order to divide that column. If the account occupied more than half of a page, partial sums were normally made: a first sum approximately on half of the page, and a second, considering the result of the first, on the other half. This, however, did not represent a general norm. The total was situated under a horizontal line.

Only on the debit side of the account (left hand side of the page) was the name of the account written, followed by the word *debe* (owes). The name and this word were written only in the first entry and were not repeated in any others. On the credit side of the account, the first entry began with the expression *Ha de aver* followed by the date and the rest of its contents. The rest of the entries were identical to those recorded on the debit side. Let us now examine the example that appears in Figure 2 corresponding to the first annotation in the credit side of the account of Alvaro de Armenta:

— 1560 —

Ha de aver en 17 de Mayo 5 qos 374 U 380 mrs. por 2 u 395 marc. de plata que entregó al tesorero de la Casa de la Moneda a 2244 mrs cada marco es lo dicho como parece a folio 219

VqosCCCLXXiiiijUCCLXX

— 1560 —

Ha de aver on the 17th of May 5 qos 374 U 380 mrs. for 2 U 395 mark of silver delivered to the treasurer of the mint at 2244 mrs. per mark as appears written on folio 219

VqosCCCLXXiiiijUCCLXX

Normally, the books were not closed at the end of the accounting process or from one period to the next. On many occasions, even the accounts that should be closed remained open

with a small residual balance which was regulated by the inclusion of a differential account entitled "surpluses and shortages of this book". Given the characteristics of the accounts that were intervening, the majority of them were closed at the end and only a few remained open.

These findings, which represent only a summary of this study from the aforementioned books, provide evidence that the method applied is in conformity with the double-entry book-keeping procedure. In the following sections, I will analyze the most relevant characteristics of the accounting method applied by the Casa. Questions about the structure of these books, the control of the operations and the corrections of errors, are beyond the scope of this paper.

ANALYSIS OF THE ACCOUNTING PROCESS CORRESPONDING TO THE SALE OF GOLD AND SILVER THAT CAME FOR HIS MAJESTY ON THE FLEET OF PEDRO DE LAS ROELAS IN 1560

Accounts Used

In the development of this accounting process, five groups of accounts were used. These will be included in the following discussion and examples.

Silver, gold, and reales of his majesty

This group represents the different amounts of gold and silver sold in public auctions to the buyers of these metals, as well as the coins (reales) that the *maestres de nao* delivered to the treasurer of the Casa. These coins belonged equally to the treasury of his majesty. The Royal Treasury obtained income from the sales of gold and silver as well as from the reales.

Buyers of gold and silver

These accounts represented the debts of the buyers to the Royal Treasury for the purchase of treasures. These debts had to be satisfied according to what had been stipulated in the contract of sale. This was normally through the delivery of silver or gold to the treasurer of the mint. Then, after three to six days, the metals were smelted according to the law and made into coined money. Consequently, these are the asset accounts that give rights to the Royal Treasury over the buyers of gold and silver for a sale realized on credit.

The treasurer of the mint

The debt of buyers, at the delivery of the gold and silver to the treasurer of the mint, was transformed into the debt of this treasurer now owed to the Royal Treasury. Consequently, this account is likewise an asset.

The treasurer of the Casa de la Contratación

This account functions like the current treasurership, which is in charge of the receipt of cash, coming either from the treasurer of the mint, from the *reales* that were handed over the treasure of the Casa by the *maestres*, or from the cash payments received by the treasurer from the buyers of gold and silver in order to balance their accounts. Consequently, it is treated by an asset account. Because the asset does not appear as cash-outflow for the expenses he was ordered to pay, this process seems peculiar.

Feble y fuerte

These accounts represented differential accounts that could be profit (*feble*) or losses (*fuerte*). The *feble* represented the profit or excess that was obtained in the process of coining, more money than was legally stipulated according to the fixed amount which was 67 *reales* per mark of silver and 68 *escudos* per mark of gold. The *fuerte* represented the loss that was produced when fewer coins than anticipated, in accordance with the legally fixed amount, were produced. Therefore, their functioning is characteristic of a differential account.

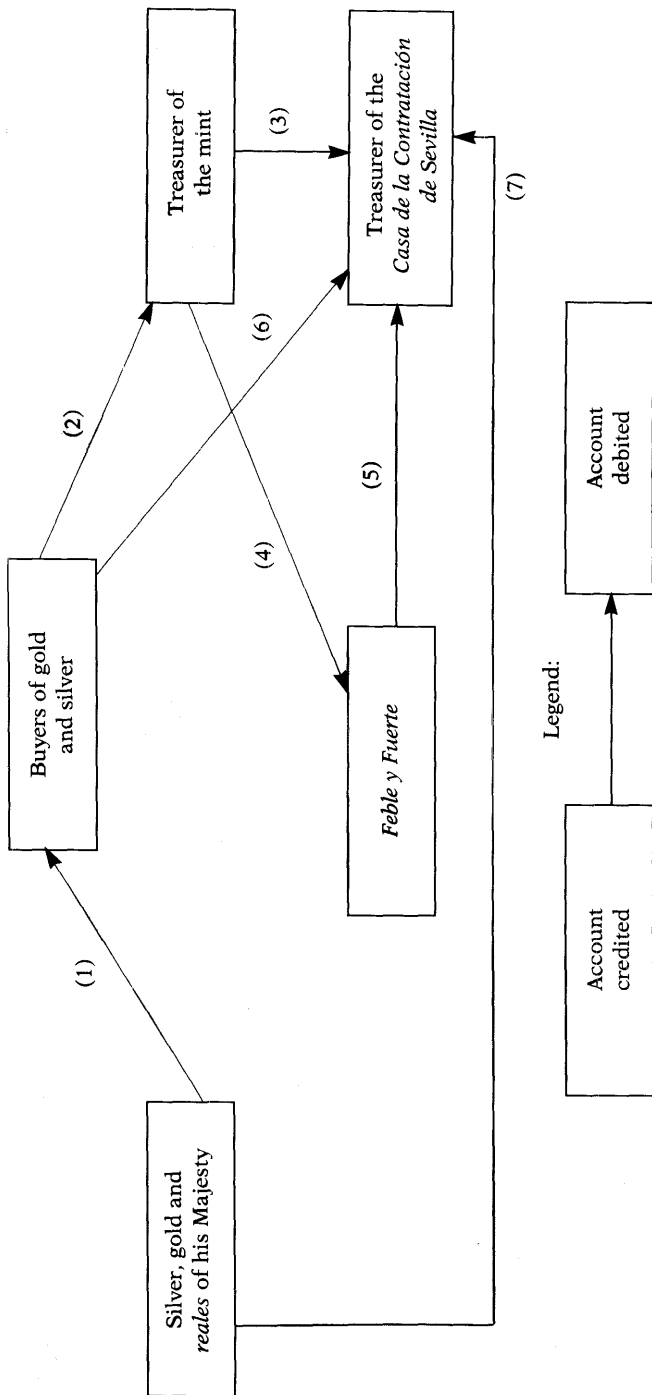
Representation of Transactions in a General Diagram

This accounting process, the simplest of those that we have analyzed, consisted of only seven general transactions. In truth, these seven transactions result in 345 entries in the diary (manual). Thus, when we speak of general transactions, we are really referring to groupings of entries of the same nature.

In Figure 3, I present a general diagram of these transactions using the coordination credit/debit with an arrow (whose point indicates the account that is being debited, and whose tail indicates the account that is being credited). Also included in the center of the arrow is a number, in parenthesis, indicative of the transaction whose meaning corresponds to the following:

- (1) *Sales of gold and silver*: This transaction reflects the sales of gold and silver, whose accounting representa-

FIGURE 3
General Diagram of the Operations Accounted in the "Manual" (Diary)
(1560)



tion is identical to that which we use today in order to account for the sale of merchandise on credit.

- (2) *Gold and silver required by law in order to coin that which is delivered to the treasure of the mint:* Accounting entries reflect the payment of the debt of the buyers through the delivery of the silver required by law, to the treasurer of the mint.
- (3) *Gold and silver transformed into coin that the treasure of the mint then handed over to the treasurer of the Casa de la Contratación:* Having coined the metals, the treasure of the mint handed over to the treasurer of the Casa the obtained *reales* of silver or *escudos* of gold.
- (4) *What resulted from fuerte during the coinage process:* This, along with the following, represents transactions complementary to the previous one. The *fuerte*, as we have said, reflected the loss accumulated during the process of coining gold or silver.
- (5) *What resulted from feble during the coinage process:* The *feble* reflected the profit obtained during the coining process. *Feble* was charged to the treasurer of the Casa as he received it under his power and credited to the account of *feble y fuerte*. The balance for *feble* was, therefore, a credit-balance, and for *fuerte* a debit-balance. As both were accounted for in the same account, its balance indicated a loss or a profit in the process of coinage. At the end, the balance was dependent on whether the *fuerte* was either higher or lower than the *feble*.
- (6) *Cash payment from the buyers of gold and silver made in order to liquidate their debts:* The delivery of gold and silver required by law in order to mint coins from the buyers to the treasurer of the mint was not the only mechanism that the buyers used in order to settle their debts. On occasion, principally to liquidate the remainder of their debts at the end, they made delivery directly to the treasurer of the Casa from the corresponding coin.
- (7) *The delivery of reales on behalf of the maestres de nao:* In the *naos*, not only were metals brought in paste, but the *maestres* on occasion brought coined *reales* made in the Indies. These *reales* were delivered to the treasurer of the Casa as property of the King. Thus, treasures

(coins) belonging to the King that came from the other side of the Atlantic were included in the *Casa's* inventory.

At the end of this entire process, only three general accounts remained open: "Silver, gold, and *reales* of his majesty" (income through sales), "the treasurer of the *Casa de la Contratación*" (account of the treasurership or cash account) and "*feble y fuerte*" (account of the profit and loss resulting from the coining process). The three accounts formed a relationship such that the balance of the first is equal to that of the second, plus or minus, depending on whether it be debit or credit, the balance of *feble y fuerte*. Which is to say:

$$\begin{array}{r} \text{Silver, gold and } \textit{reales} \text{ of his Majesty} \\ = \\ \text{The treasurer of the } \textit{Casa de la Contratación} \\ +/- \\ \textit{Feble y fuerte} \end{array}$$

Having arrived at this point, the process could be balanced perfectly with a closing by making only a transfer of balances. But evidently, these transactions are not made here, since they were not made even by merchants in their accounting during this period. Furthermore, it should be remembered that this having been done, the objective of control the Royal Treasury was pursuing was completely satisfied with the utilization of the double-entry accounting method herein analyzed.

CONCLUDING REMARKS

The present study has analyzed an important number of documents whose existence was first announced by Hernández-Esteve [1986, p. 58]. According to his prediction, the outcomes of such an analysis provide interesting insights on the relationships and transactions associated with the minting process of gold and silver by the *Casa de la Contratación*.

After the examination of the documents found in the Archives of the Indies, we can conclude that the double-entry bookkeeping method was the accounting procedure applied by the treasurer of the Casa in order to record the transactions related to the sale of gold and silver to the merchants, and the subsequent delivery of the coined metals.

The importance of these findings pertains to the fact that a public institution utilized an accounting method which previously had only been applied by merchants. Consequently, Spain was not only the first country to issue a law compelling the merchants to follow the double-entry method, but was also the first one in which the method was implemented by a public institution. The single-entry bookkeeping method, however, continued to be used, being the official procedure to control the activity of the treasurer of the Casa.

I did not find any document justifying the reasons that led the Casa to implement the double-entry method when accounting for the transactions related to the precious metals. Therefore, the reason for its adoption is not known.

I believe, however, that there are certain factors which could have made this method appear to be the most suitable one to account for such important transactions. First, it was generally known and understood by private merchants and proved to be useful in the realm of private businesses. In fact, Spain was the first country to issue laws (the *Reales Pragmáticas* of 1549 and 1552) which compelled the merchants to apply the double-entry method.

Second, the information provided by the so-called *Cargo y Data* method (single-entry), commonly used by public institutions, was only useful to control the activity carried out by the treasurer. Given the complexity of the minting process, in which a wide number of subjects took part, there was a need for a strict control of the balance of a great number of accounts. Therefore, the single-entry method was not enough, and it had to be complemented with the double-entry method — a method much more suitable to establishing strict control.

Thus, the implementation of the double-entry method and the use of the ledger enabled the treasurer to know exactly the credit or debit balance corresponding to each account, those representing the stocks of each metal and those which represent the debtors (merchants). This allowed the treasurer to determine the residual balances resulting from the sale and re-purchase of the metals and the deliveries to be made by every merchant.

Little is known about the origins of the double-entry method in the practice of accounting in Spain, because of the scarcity of pre-sixteenth century documents. The earliest theoretical contribution was provided in the book *Libro de Caxa y*

Manual de Cuentas de Mercaderes y Otras Personas con la Declaración Dellos published in 1590 by Bartolomé Salvador de Solórzano, almost a century after the appearance of Pacioli's work. It includes examples which illustrate the application of the method to account for business transactions, according to the laws issued by the Crown in 1549 and 1552, without recognizing any foreign influence on the Spanish practices. In view of the preceding examples, the research affirms that the method used by the Casa coincides with that explained by Solórzano.

Given the close relationship existing between Spain and Italy after the Middle Ages (when the Castilian Crown conquered vast territories in Italy and the trade with Italian merchants, many of which settled in Spain, increased remarkably), it is likely that the Italian accounting practices influenced the development of the Spanish ones. However, no document reflecting the influence of the Italian tradition on the practice of accounting in Spain was discovered. Since no evidence in that respect was found, future research should attempt to elucidate such relationships.

REFERENCES

- Hamilton, E. J., *El Tesoro Americano y la revolución de los precios en España, 1501-1650*, Ariel-Historia, Barcelona (1975).
- Hernández-Esteve, E., *Establecimiento de la partida doble en las cuentas centrales de la Real Hacienda de Castilla. Volumen I. Pedro Luis de Torregrosa, primer contador del Libro de Caja*. Banco de España, Servicio de Estudios, Estudios de Historia Económica n7 14, Madrid (1986).
- _____, "Spanish Accounting: The Past, with Special Reference to the 14th and 16th Centuries", *Strathclyde Convergencies Issues in Accountability*, n. 7 (April, 1981).
- _____, "La Historia de la Contabilidad y los Primeros Tiempos de la Partida Doble en España", *R. Técnica Económica*, vol. I (1982).
- Melis, F., *Storia della Ragioneria*, Bolonia (1950).
- Peragallo, E., *Origin and Evolution of Double Entry Bookkeeping, A Study of Italian Practice from the Fourteenth Century*, New York (1938).
- Robert, R., "La Contabilidad a través de los Tiempos, origen y evolución de la Partida Doble", *Técnica Contable*, vol. IV (1952).