

The Theory of the History of Double Entry Bookkeeping in Germany

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Preface

This paper is the English translation of the contents and summary of each chapter of my work, *The Theory of the History of Double-Entry Bookkeeping in Germany*, which was published in 1994 by Moriyama Shoten (the name of publisher).

The aim of my work is to investigate and make clear the process and the development of double-entry bookkeeping and accounting in Germany from the 14th and 15th century to the 18th century, year 1781.

The main area of the study of the history has been of bookkeeping in Germany in the 15th and the 16th century.

The 17th and the 18th century had not been included in the object of the study by *many* professors of accounting history.

Although Balduin Penndorf writes that the account books of the 17th century did not show the development of bookkeeping, and it seems that the 17th century and the 18th century are the dark ages of the history of accounting in Germany, I found that many valuable accounting works were published in the 17th and 18th century in Germany.

I began to study the history of bookkeeping in Germany by investigating the account books of the Hanseatic Merchants and the Nürnberg Merchants. The relation of double-entry bookkeeping of the Hanseatic merchants was not the same as that of the Nürnberg merchants. Although the Nürnberg merchants introduced the double-entry bookkeeping of Venice to Nürnberg, the Hanseatic merchants had not used the double-entry bookkeeping for a long time. We can find the beginning of double-entry bookkeeping in Germany in the record of the Nürnberg merchants in the 15th century.

Jacob Fugger went to Venice in 1473 and he learned the double-entry bookkeeping system and introduced this system to his house. Anton Fugger who succeeded in Jacob's business made the inventories of each branch and the balance sheet and profit and loss statement of 1527, and reckoned the profit of the business of 17 years, and after that time he made the balance sheet of 1533, 1536, 1539, 1546 and 1553. They show the

calculation of profit for several years by comparing the different years. The inventory method for calculation of profit that Fuggers showed was very valuable material in the history of accounting.

Matthäus Schwartz, who was the chief bookkeeper of the Fuggers, wrote the manuscript of bookkeeping in 1516, 1518 and 1550, and explained the agency bookkeeping, double-entry bookkeeping and showed the calculation of profit of seven years by two methods, the revenue and expense method, and the method comparing the two capitals.

The House of Welser, the second biggest house next to the house of Fugger, had adopted a complicated double-entry bookkeeping system in order to manage the business.

Schreiber, who wrote the earliest work on bookkeeping in Germany in 1518, explained the profit and loss calculation of goods and the period, but he did not show the verification of calculation by a table, but only did so in writing. Gottlieb, who was not affected by Schreiber adopts a journal, a debt book and a goods book and a balance sheet, and calculates profit and loss by a specific cost method and derivative method in his work of 1546. Schweicker, who introduced Pacioli's bookkeeping theory for the first time in Germany in 1549, made mistakes in posting from journal to ledger.

Gammersfelder's work which was published in 1570, is based on the Italian double-entry bookkeeping system according to the method of Pacioli and is the most important work of double-entry bookkeeping in Northern Germany in the 16th century. Goessens illustrated the accounting period of one year from January 1st to December 31st and accomplished the continental form of closing the ledger in his work of 1594.

Lerice, who explained the traditional Italian bookkeeping method in Northern Germany, introduced a journal, a ledger and a commodity book that does not show the amount of money, but only the quantity, and Wolff, who described the traditional German bookkeeping method in Southern Germany, wrote a journal, a merchandise book, a debt book

and showed five financial statements that contain three balance sheets and two calculation verification sheets. Hager showed in his work of 1624, an example of a day book that Pacioli explained, and illustrated eight kinds of subsidiary account books. Although Schurtz, who published two works on bookkeeping, explained the traditional account book system as well as Schreiber, Gottlieb and Wolff in his first work of 1662, he adopted the Italian-account-book system in his second work of 1695, and made it clear that the traditional account book system of Germany replaced Pacioli's bookkeeping system at the end of the 17th century in Germany.

Hermling and Rademann adopted the three-account-books systems of a day book, a journal and a ledger that Pacioli explained, and in it illustrated how to calculate the profit for one year from January to December. We can value that Dibbern showed the working sheet that has three columns, that is a trial balance, profit and loss statement and balance sheet in his work of 1692.

Hyne, who illustrated the opening inventory, the day book, the journal and the ledger in his work of 1725, as well as that of Goessens, Hager, Rademan and Dibbern, shows three kinds of commodity accounts, a special commodity account, an all-commodity account, purchase, sales and inventory commodity and makes the closing inventory, the trial balance, the profit and loss statement and the balance sheet. Magelsen explained about depreciation from the point of view of theory and practice, and classifies all accounts into three groups, that is, the property account, the personal account and the transfer account in his work of 1772.

The three works of Fleischer, Krügers and Flügel, which were published in Germany in 1781, contributed to the development of the Italian bookkeeping system.

Although many accounting historians have given high appraisal to Simon Stevin, I think that Steven did not have any influence on the history of accounting in Germany.

Chapter 1 Introduction

Summary

The fourteenth century was the beginning time of the history of the bookkeeping in Germany. The oldest extant account book of Southern Germany is the record of Holtzschuher of Nürnberg from 1304 to 1307. The earliest Hanseatic merchant's account book is the record of Lübecker Hermann Wittenborg and his son from 1329 to 1360.

Consequently, the history of bookkeeping in Germany was begun in two areas, Southern German cities, especially Nürnberg and Augsburg, and the Hanseatic cities in Northern Germany.

But the bookkeeping system of the Hanseatic merchants was not the same as that of the Southern German merchants. The records of the Hanseatic merchants were inferior, and the form of business organization was less developed in the Hanseatic than in that of Southern Germany. It can be concluded that the Hanseatic merchants were more conservative than those of Southern Germany, and the manner of commerce and form of organization was less complicated than in Southern Germany, which was influenced by Mediterranean cities, especially Venice.

The Hanseatic merchants conducted their business by means of factors or agents in foreign cities. Their typical form was called "gegenseitige Ferngesellschaft", in which two partners work in different places, acting as agents for each other. The Hanseatic merchant often stayed at home and managed his business from the counting-house, and his agents travelled back and forth between several cities, Lübeck, Bruges, Danzig, Hamburg etc. The aim of Hanseatic bookkeeping was not to give a comprehensive view of the company's financial statement, but to record the necessary data for the periodic settlement of accounts between principal and agent, and to keep a record of outstanding claims.

Hanseatic merchants never went beyond this goal. Double-entry bookkeeping system in Hanseatic cities was yet unknown, at least it was not yet being used.

Double-entry bookkeeping had been developed in Italy in the 14th Century, that is long before Luca Pacioli published his bookkeeping work. The strongest city country in the Italian peninsula at the end of the 14th century was the Venetian Republic. Venice flourished politically, economically and culturally during the golden age from the late 14th to the 15th century.

One of the major reasons for economic prosperity in Venice was a constant trading with Southern Germany, which was carried on in Venice at the Fondaco dei Tedeschi (German house) which dates back to 1228. The Venetian merchants adopted double-entry bookkeeping as a new commercial art and made use of it for their commercial transactions. Nürnberg merchants went to Fondaco dei Tedeschi in Venice for training and learned the Italian bookkeeping system and introduced this system of Venice into Nürnberg for the first time in the 15th century, and this Italian bookkeeping system was spread from Venice to Southern Germany.

We can find the beginning of double-entry bookkeeping record of Germany in the account books of the Kress, the Mendels and Lang-Hans Tuchers in the 15th century. In the 14th and 15th century, commercial companies were founded in Nürnberg and Augsburg. Their structures were similar to those of the Italian trading firms and banking houses. An intensive merchandising and money trade came into existence between Venice and Southern Germany. Jacob Fugger went to Venice in 1473 to learn Venetian bookkeeping and learned double-entry bookkeeping, but relatively late because in Nürnberg this training practice was already carried out earlier.

But when Jacob became the ruler of the Fuggers, he reorganized the accounting system of the Fuggers by adopting the Venetian bookkeeping method.

Chapter 2 Financial Statements of the House of Fugger

Summary

The House of Fugger was the biggest and the wealthiest merchant group in Europe in the 16th century. The research of the account books of the House of Fugger was carried out by Ehrenberg, Kellenberg, Penndorf, Strieder, and Pölnitz in Germany, and particularly, the study of the account book of the Fugger's bookkeeper, Matthäus Schwarz, was reported in Weitnauer's book. I discovered that two copies of Schwarz's studies are kept in Österreichische Nationalbibliothek and Biblioteka Gdańska. We can understand in detail concerning the consolidated financial statement including inventory, balance sheet and profit statement of 1527 in the book of Strieder (*Die Inventur der Firma Fugger aus dem Jahre 1527*). In the summer of 1979 I visited the Fugger Archives at Dilligen, and I found that the materials are kept in the Fugger Archives. Jacob Fugger became the ruler of the Fuggers in 1510, after the death of Ulrich Fugger, and he made the financial statement. Jacob Fugger, the rich merchant who was the head of the Fugger House and was an eminent and most distinguished merchant, incorporated the house into an unlimited partnership which was composed of his family, and Jacob died in 1525.

Anton Fugger, who succeeded in Jacob's business, ordered all branches in Europe to submit their financial statements, and Anton had a plan to make a consolidated inventory and the consolidated financial statement of the head office and branch offices. All branches made an inventory and sent it to the head office, and the currencies of the states in which each branch existed were used in order to evaluate the assets and liabilities of the inventory. The head office had to convert various currencies into a unified currency, Rhine gold gulden. Anton made the consolidated inventory, balance sheet and profit and loss statement of 1527 and reckoned the profit of the business for 17 years between 1511

and 1527.

At first, Anton made a consolidated inventory which consisted of assets, liabilities, inventory-book and black-book. In the inventory-book, houses, sheds, gardens, finery etc. are listed, and uncollectable accounts are written in the black-book. Although assets and liabilities are transferred to the balance sheet, items of the inventory-book and the black-book are not transferred to the balance sheet. The balance sheet of the last date of 1527 (which provided information regarding the assets and liabilities of many branches and the head office, and the capital) was made from the inventory of 1527 with the greatest care, under the leadership of Anton Fugger.

The total capital that was valued by gold and coinage was 2,132,791 Rhine gulden.

coinage	1,355,816
gold coin	<u>776,975</u>
Total	2,132,791

Two monetary units, gold coin and coinage of the balance sheet, were unified into gold coin in the profit and loss statement. The profit and loss statement of 1527 was made from the inventory of 1527, the balance sheet of 1527 and the profit and loss statement of 1511. The fixed property was 127,902 Rhine gold gulden, and the outstanding assets, goods and other all assets were 1,904,750 Rhine gold gulden, and then the total was 2,032,652 Rhine gold gulden. The amount that was subtracted from this total was 11,450 Rhine gold gulden for contribution. The final total was 2,021,202 Rhine gold gulden, the capital in December of 1527. When one subtracts the capital of 1511 (196,791 R. gold gulden) from this, the impressive sum of 1,824,411 R. Gold gulden remains a profit for the 17 years between 1511-1527.

The consolidated financial statement of the House of Fugger of 1527 was composed of the inventory, the balance sheet, and the profit statement of 1511 and 1527. The inventory is classified into an active

(aktiva), a passive (Passiva), inventory book (Inventarbuch), and the black book (schwarzes Buch). Although in the inventory, the words of active and passive are changed into revenue (Ainemen) and expense (Ausgeben) in the balance sheet, the balance sheet is composed of revenue and expense. The contents of the balance sheet are classified by the name of the city in Europe. The profit statement of 1527, which was made from the inventory and the balance sheet, shows two important contents, profit calculation and capital calculation. The difference of the capital of 1527, (deducting the amount of contribution) and the capital of 1511 is the profit during 17 years. And he calculates the true capital of 1527 by deducting the capital of 1511 and the money withdrawn privately for 17 years from the total amount of the capital of 1527. The concept of capital and profit of the Fuggers didn't exist in the branch offices. The capital and the profit were computed in only the head office in Augsburg. The Fuggers made the inventory and the balance sheet of 1527 by the physical-inventory method and calculated the profit for 17 years by comparing two capitals of different years. The practice of an accounting method by physical inventory was adopted by the House of Fugger in 1527.

After that time, Anton Fugger made the inventories of factories and balance sheet of the head office of 1533, 1536, 1539, 1546 and 1553, and he calculated the profit for several years of the Fuggers by comparing two capitals of different years. I found the balance sheets of 1533, 1546 and 1553 as well as the financial statement of 1527 in the Fugger Archives at Dillingen, but there were no balance sheets of 1536 and 1539 in the archives. The balance sheets of 1533, 1546 and 1553, as well as 1527, consist of two parts which contained the actives and passives of factories.

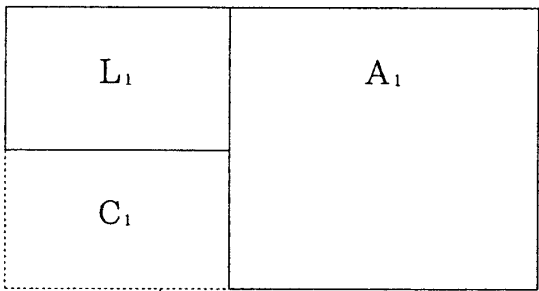
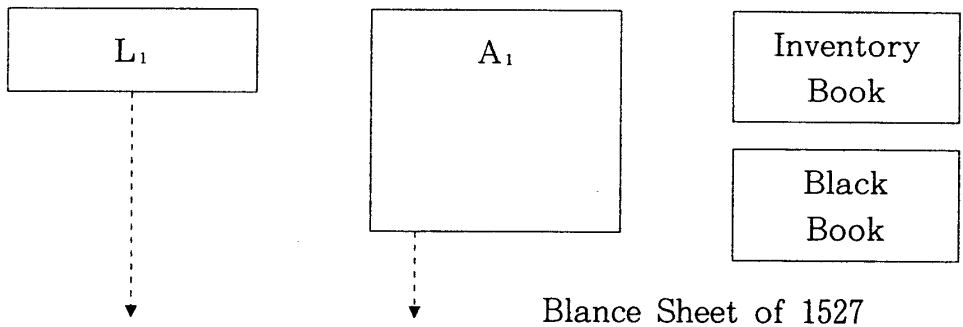
And Anton calculated the profit of several years of Fuggers by comparing two capitals of different years. In connection with the inventories, a balance sheet was prepared (drawn up). Active and passive parts were placed opposite each other in the account form, and

the resulting profit was determined by comparing the current capital and preceding capital. For example, the capital of 1553, after deducting a reserve of 100,000, is 3,248,794 gulden, and the preceding capital of 1546 for calculation was 2,327,276 gulden. Therefore the profit for nine years of 921,518 gulden is determined by comparing the two capitals of 1553 and 1546.

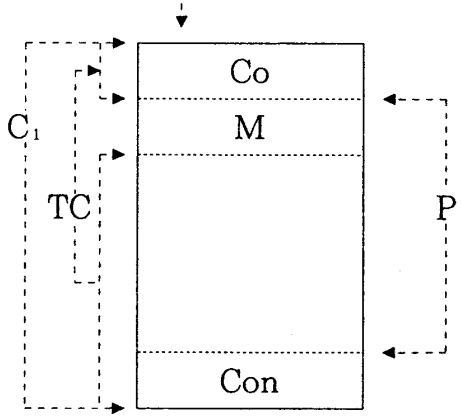
Although Schwartz calculated the profit by two methods, revenue and expense method and inventory method, the Fuggers showed only one method, the inventory method, in order to calculate the profit. But the Fuggers was a big house and had many factories and was a very complicated organization. It was, therefore, very difficult for Fuggers to make inventories, balance sheets and profit statements. The profit calculation method of the Fuggers is very valuable material in the history of accounting.

The Consolidated Financial Statement of the House of Fugger of 1527

Inventory of 1527



Profit Statement of 1527



$$A_1 - L_1 = C_1;$$

$$C_1 - M = TC$$

$$C_1 - (Con + Co) = P$$

- C₁ = Capital of 1527
- Co = Capital of 1511
- A₁ = Assets
- L₁ = Liabilities
- TC = True Capital
- P = Profit for 17 years
- M = Money withdrawn privately
- Con = Contribution

Chapter 3 The Bookkeeping of Matthäus Schwartz

Summary

Matthäus Schwartz, who was the chief bookkeeper of the House of Fugger, was born in Augsburg in 1497 as a son of a rich wine merchant.

He went to Italy in 1514, when he was 17 years old, and in Venice he met Antonio Mariafior who had a great reputation and was a teacher of the bookkeeping of Domenico Manzoni.

In 1516, he returned to Augsburg, confident that he knew the bookkeeping method. But he soon understood that his teacher's knowledge was superficial, and he entered into the employment of the House of Fugger in Augsburg, and he occupied the post of the chief bookkeeper of this house.

He applied himself to the study of the bookkeeping method of Fuggers in Augsburg. He wrote the manuscript of bookkeeping in 1516, 1518 and 1550, but this manuscript had disappeared and three copies that were written in 1551, 1555, and 1564 have been kept in the libraries at Elbing, Vienna and Danzig. Alfred Weitnauer published a work in 1931 that shows the copies of Schwarz's bookkeeping manuscript.

I have microfilms of the two copies in Vienna and Danzig, and I could have a chance to see and research the copy of the one in the library in Vienna (Österreichische Nationalbibliothek). The manuscript begins with some explanation about bookkeeping and the various account books. The important part is the five illustrative examples. The first account example is kept by the agency bookkeeping. The first important account is the cash account, and the second account is Jacob Fugger's account. Jacob Fugger's account is not a capital account, but a master's account or head office account. At the end of the period all the asset and liability account balances, other than a cash-account balance, are transferred to the Jacob Fugger account, and the credit balance of

Jacob Fugger is equal to the debit balance in the cash account.

Profit and loss calculation is not necessary in the case of agency bookkeeping. The agency bookkeeping was illustrated clearly in the book, Valentin Mennher's *Practique brifue pour cyfrer et tenir Livres de Compte*, published in Antwerp in 1550. It is very interesting that Mennher, who was born in Kempten in south Bavaria, came to Antwerp from Ausgburg. Schwarz's first example has many points of similarity to Valentin Mennher's Italian bookkeeping system.

The fifth example that showed the profit and loss calculation is brief, but very useful and important. The calculation of profit and loss from 1546 to 1553, prescribed by Schwartz, has some resemblance to the profit and loss calculation from 1546 to 1553 that was shown in the balance sheet of Fuggers in 1553, one of some of the surviving Fugger's documents. The Fugger's balance sheet shows the capital of 1553, and deducts from it the capital of 1546, and calculates the profit for seven years. Schwartz calculated the profit of seven years by two methods, the revenue and expense method and a method comparing two capitals. It is clear that Schwartz's method is superior to the method of Fuggers, because Schwartz's method has a verification function.

Chapter 4 Account Books of the House of Welser

Summary

In Germany during the age of renaissance, there were many famous merchants. The most distinguished and respected merchant was Augsburg patrician, councillor and merchant-Bartholomäus Welser, next after Jacob Fugger of the House of Fugger. Bartholomäus Welser was born in 1484. After the death of his father, Anton, he continued the business under the name of Bartholomäus Welser and Company. By advancing money to craftsman, mining and foundary people in Germany and foreign territories, he arranged for the production of cloth, fustian and metals for export to many foreign countries, in order to import spices, drugs, safran and mediterranean agricultural products. The House of Welser maintained branches in Nürnberg, Ulm, Leipzig, Cologne, Antwerp, Lyon, Lisbon, Venice, Milan and Rome.

When we think about the important part that the house of Welser played in the history of economics, we have to recognize the importance of the history of accounting played by the house of Welser. But it is very difficult to study the accounting of the house of Welser, because the documents of the accounting of Welser are very few. Several years ago, some theses about the accounting books of the house of Welser were written by Korzendorfer, Roßman and Kellenbenz. According to these theses, fragments of the accounting books of the house of Welser are still in existence in Germany. After the collapse of the house of Welser in 1614, the ledger from 1554-1560 of the house of Welser in Augsburg was sold as scrap paper. An official of the State Library in Bamberg obtained this ledger, but he cut out about 260 pages to make a folder for copper plates. And the remaining fragment of this ledger is still in the State Library at Bamberg.

In the summer of 1979 I went to Europe as a scholar delegated by the Japanese Ministry of Education. I stayed in Germany for about 3

weeks, mainly at Augsburg. I visited the State Library in Bamberg and I could get a chance to look into the fragment of the ledger from 1554-1560 of the Welsers in Augsburg. At the State Library in Bamberg this fragment was treasured as a very valuable book of the days of early capitalism.

I met Dr. Schleicher and Dr. Schmmel at the State Library, and I could study this fragment in the reading room of this library. This ledger is composed of two volumes and one box. In the box there are some cut papers of this ledger. In the first volume there are 35 folios and 4 fragments of paper. In the second volume there are 32 folios and 20 fragments of paper. In this ledger, corresponding sheets of debit and credit (soll und haben) have been preserved in only 12 cases. This ledger is based on the double-entry bookkeeping and contains the account for persons and the type of account. I think that the aim of this ledger is to determine the capital and to calculate the profit and loss of this company. But it is very regrettable that I could not understand the accounting system of the Welsers perfectly, because there are only fragments of the ledger.

The inventory and the balance sheet of the House of Welser no longer exist, but it is clear that a complicated bookkeeping system was introduced and many account books, for example, day book, cash book, bill book, cost book, journal and ledger, were used. There are some points of similarity between the bookkeeping practice of the House of Welsers and the bookkeeping system of account books in Germany of the 19th century. The bookkeeping skill of Welsers had reached a high stage of development.

Chapter 5 Bookkeeping Works of Schreiber and Gottlieb

Summary

Double-entry bookkeeping originated in Italy and the first printed treatise of double-entry bookkeeping in the world is "Summa", written by Luca Pacioli. Summa was published in Venice in 1494. The beginning of double-entry bookkeeping in Germany was carried out by the Merchants of Nürnberg in the 15th century. The merchants of Nürnberg introduced double-entry bookkeeping of Italy to Nürnberg. Schreiber's *Any new kunstlich Buech*, which is the earliest work on bookkeeping in Germany, was published in Nürnberg in 1518. This book was the second book in the world on bookkeeping after Pacioli. Gottlieb's *Ein Teutsch verständig Buchhalten* (1531) and *Buchhalten zwey kunstliche* (1546) were published in Nürnberg, too.

The two works of Schreiber and Gottlieb are representative of that time and famous books on bookkeeping in Germany in the 16th century. Though these books were published in the same city and about same time, they have their individual characteristics. Schreiber and Gottlieb describe the system of bookkeeping which requires three main books, a journal (Zornal), a debt book (Schuldbuch) and a goods book (Kaps), but the contents of the books are not the same.

The journal of Schreiber is not recorded as a double-entry system, but the debt book and the goods book are recorded in the double-entry system. The accounts of the journal are posted in two ledgers, but Schreiber does not use a contra account of right and left, the right side is not a contrast to the left side. The verification of Schreiber is based on the fact that the profit of goods is the same as the profit of the same period. But he did not show the verification by a table, but only in writing.

Gottlieb writes only a journal, a debt book and a goods book in the first work (1531). But he shows how to write about closing the books,

profit and loss, the balance sheet and verification in the second book (1546). The journal of Gottlieb is recorded in a double-entry system. And the accounts in the journal are posted in two books according to the double-entry bookkeeping method. He calculates profit and loss by a specific cost method and derivative method, and he tests the verification of the two methods. I think that Gottlieb's bookkeeping system is certainly based on the double-entry bookkeeping. Gottlieb was not affected by Schreiber, and Gottlieb has much effect upon later works on bookkeeping in Germany. We can not see in two works, the calculation of profit and loss by the inventory method which the House of Fugger completed in the 16th century in Augsburg. We can believe that the double-entry bookkeeping system which the Merchants of Nürnberg introduced was accomplished in Nürnberg in the first half of the 16th century.

Chapter 6 The Theory of Bookkeeping in Schweicker's Work

Summary

The beginning of double-entry bookkeeping in Germany was carried out by the merchants of Nürnberg in the 15th century. This double-entry bookkeeping which the merchants of Nürnberg introduced from Venice to Nürnberg, developed into the bookkeeping system of the German form in South Germany. The two works of Schweicker and Gottlieb, which were published in Nürnberg in the first half of the 16th century, were written about this bookkeeping system in South Germany. Wolfgang Schweicker's *Zweifach Buchhalten*, which was published in Nürnberg in 1549, is the earliest book in Germany that is in the Venetian and Pacioli's style, because the two works of Schreiber and Gottlieb before Schweicker was not affected by Pacioli. Schweicker, who came from Nürnberg, were a resident in Venice at the time of the publication of his work, and studied the double-entry bookkeeping in Venice. Historians have given different assessments or interpretations of Schweicker's work. Fogo writes, "It is a translation of Manzoni's *Quaderno doppio*."

Penndorf believed that Pacioli's treatise was imitated by Manzoni in 1543, and Schweicker depended on Manzoni's treatise completely. Yamey says, "Schweicker was not a slavish translator of Manzoni." It is true that Schweicker is the first exponent of Pacioli's treatise and he referred to Manzoni's work. The connection between Schweicker and Manzoni is closest in the form of bookkeeping system and a part of the journal. The Accounts in the journal are posted in the book, a ledger, and are made according to the Italian method. The explanation and illustrations of the journal have many likenesses to Manzoni, especially the first five transactions are almost the same as Manzoni. We can say that Schweicker imitated Manzoni's work concerning the journal, but Schweicker did not choose the same way as Manzoni in the explanation and illustration of the ledger.

Schweicker tried to improve on Manzoni in the ledger. About closing the ledger, he adopted Pacioli's theory. The profit and loss calculation that he endeavored to show is not based on Manzoni, but based on Pacioli's theory.

But Schweicker made five mistakes in posting from the journal to the ledger, and then he committed various errors in the ledger. So, the profit and loss calculation in his closing of the ledger is not correct. He wrote a mistaken amount. The opinion that Schweicker is the only translator of Manzoni is not correct. Schweicker's work is based on Manzoni's work and Pacioli's treatise.

Many errors which he made in his illustrations of the ledger decreased the estimation of his work, so he could not get the honor as the first introducer of Pacioli's theory of double-entry bookkeeping in Germany. The seed of the Venetian bookkeeping system that Schweicker sowed in Germany had been nourished by his successors.

Chapter 7 The Theory of Bookkeeping in Gammersfelder's Work

Sammary

Sebastian Gammersfelder of Passaw was a schoolmaster in Danzig. Gammerfelder's *Buchhalten durch zwey bucher*, (Bookkeeping by two books according to Italian Manner) which was published in Danzig in 1570, is the most important book of double-entry bookkeeping in Northern Germany in the 16th century.

Before Gammersfelder's work, some famous works, for example the works of Schreiber, Gottlieb and Schweicker, were issued in Germany. But these works were published in Southern Germany, especially Nürnberg. Historians praise Gammersfelder's work. Penndorf describes it, "I have confidence that it is the oldest valuable work on bookkeeping." Kellenbenz writes, "According to Penndorf, the best German description of Italian bookkeeping was given by Gammersfelder."

Gammersfelder prescribed and illustrated the bookkeeping of a journal and ledger. Although he discusses three subsidiary records, the memorial, the bill book and the expense book in his work, he does not illustrate them. Gammersfelder's bookkeeping system is based on the Italian double-entry bookkeeping according to the way of Pacioli. Gammersfelder's illustrative set of transactions involves 233 journal entries which was grouped into 145 classes.

According to Penndorf, Gammersfelder is affected by Schweicker. Schweicker is the first exponent of Pacioli's treatise in Germany, but Schweicker committed various errors in posting from journal to ledger, so the balance account is not correct. Gammersfelder succeeded in showing the balance account according to the way of Pacioli.

Gammersfelder describes his work as a book for beginners of double-entry bookkeeping. His bookkeeping system is understandable and clear. But the way of the profit and loss calculation is not simple, but complicated, so it is difficult for beginners to understand. Before

Gammersfelder, the Fugger house completed the calculation of profit and loss by the inventory method, and Matthäus Schwarz, who became head bookkeeper of the Fugger house, showed two ways of the calculation, the inventory method and the profit and loss method. I think that Gammersfelder did not know them. Gammersfelder succeeded in introducing the double-entry bookkeeping according to the way of Pacioli in Northern Germany. The Center of the history of accounting in Germany moved from Southern Germany to Northern Germany in the latter half of the 16th century. We can say that Gammersfelder's work, which was published in Danzig, one of the Hanseatic League, symbolizes the trend of the time.

Chapter 8 The Theory of Bookkeeping in Goessens' Work

Summary

Goessens' *Buchhalten fein kurtz zusammen*, (A Short Method of Bookkeeping) was published in Hamburg in 1594. Goessens was a Huguenot refugee from Brussels and had made his home in Hamburg. He became a schoolmaster in Hamburg and taught writing, arithmetic, bookkeeping and the French language in Hamburg. Goessens explained and illustrated an inventory, a journal and a ledger. Although he prescribed a memorial, an expense book and a cash book, he did not illustrate them. Goessens' bookkeeping system is based on the Italian double-entry bookkeeping according to the way of Pacioli, as well as Gammersfelder.

Goessens' illustrative set of transactions involves 313 journal entries which were grouped into 147 classes. The number of accounts in the ledger is 128, which are shown in 36 folios. He has included large pieces of verse and explained his regulations, but according to Penndorf, these doggerels are completely worthless. All amounts of the journal and ledger are entered in two columns. First is the currency of Lübeck, and second is the currency of Flemish. When a foreign currency is used, the third innermost column in the ledger is made for the foreign currency. And when he made the money columns in the ledger, he inserted the amounts in the narrative part between the debit and credit. Goessens calculates profit and loss by a specific-cost method and derivative method. His profit and loss method is similar to Gammersfelder, but his method is simpler than Gammersfelder.

Woolf writes concerning Goessens's work, "It has no particular merit beyond that of introducing the practice of placing a separate heading at the top of each ledger folio." Fogo says Goessens' merit lies in the absolute clearness of his instructions and in the admirable arrangement of his ledger.

I think that Goessens' work has two merits. First, he illustrated the accounting period of one year from January 1st to December 31st. Second, he accomplished the continental form of closing the ledger. The ledger marked A is closed with a closing balance account. The opening of the new ledger marked B, begins with a reversed opening balance account titled "Balance of the old book A (Bilantzo der Alten Bucher A)". Transferring entries of the closing ledger is carried out through the journal. There are two journal entries for the closing of the ledger and the opening of the ledger.

Fogo writes, "Germany also in the (16th) century produced one more good writer in Passchier-Goessens". Goessens is one of the last famous writers in Germany in the 16th century. The history of work of bookkeeping in Germany in the 16th century, which was begun by Schreiber in Nürnberg, ends with Goessens in Hamburg. Hamburg was one of the German Hanse towns. The Hanseatic League was on the decline in the last period of the 16th century, but Hamburg continued to develop in the 17th century. And the history of the work of bookkeeping in Germany continues in the 17th century.

Chapter 9 German Works on Bookkeeping in the 17th Century — About Lerice and Wolff —

Summary

Ambrosium Lerice's two books, *Eine Shöne Forma Des Buchhaltens* ·····, and *Das Ander Theil vom Buchhalten* ·····, were published in Danzig in 1606 and 1610. Nicolaus Wolff's *Kurze Doch grundliche und aigentliche beschreibung* ·····, was issued in Nürnberg in 1610. The aim of of my treatise is to investigate three account works and to clear up the history of bookkeeping around the beginning of the 17th century in Germany. Lerice, who was born in Genova in Italy, explained the traditional Italian bookkeeping method in Danzig, as well as Gammersfeder (1570) and Sartorium (1592).

Lerice adopted the word "Italian method" in the title of his work. Lerice referred to the account book of Sartorium who depended on the work of Gammersfelder. Sartorium introduced the accounting period of one year from January 1st to December 31st before Goessens and Stevin. Lerice considered this accounting period of one year, however he did not show it in his account example. The two-account-book system of a journal and a ledger that Lerice discussed, is the Venezian bookkeeping method that Manzoni, Casanova and Moschetti showed in Venice.

It is clear that the Venezian bookkeeping Method in Italy took root in Danzig in North Germany from the end of the 16th century to the beginning of the 17th century by Gammersfeder, Sartorium and Lerice. It is worth noting that Lerice wrote the consignment-sales-commodity account in his accounting example, and he introduced a commodity book that did not show the amount of money, but only quantity, as a subsidiary book.

And it is interesting that the method of comparing the money account with the capital account to close the ledger, was influenced by the

agency bookkeeping system in South Germany that Schwarz (1518) and Mennher (1550) showed. Wolff, who is a native and citizen of Nürnberg, wrote in his book that he described, his work to help the merchants who did not know the correct bookkeeping method. But his system is somewhat complicated because of his cumbersome devices. The special feature of Wolff's bookkeeping system is that he explains four account books, a day book, a journal, a merchandise book and a debt book, but he omits a day book in his accounting example. This account-book system in which the ledger is divided into two books, is the traditional method in South Germany that Schreiber, Gottlieb and Schwarz explained.

The accounting period that Wolff showed in his account example is one year from January to December. This shows that this accounting period was introduced to South Germany as well as North Germany. Wolff uses "calculation account" instead of balance account.

This calculation account which shows the balances of all accounts, that is, asset, cost, liability, capital and profit & loss in the merchandise book and the debt book, is a very important account in his accounting system. He made five financial statements, three balance sheets and two calculation verification sheets, which are complicated. The main difference of Lerice and Wolff is the account-book system and the kinds of accounts.

Lerice made a ledger and balance account, however Wolff explained the merchandise book and the debt book and devises a calculation account instead of a balance account. There are some points of similarity between Lerice and Wolff, concerning the introduction of the merchandise-book system and the method of closing the ledger etc.

I think that we should praise the works of the two authors which clarified the history of accounting around the beginning of the 17th century in Germany.

Chapter 10 The Theory of Bookkeeping in Hager's Work

Summary

Hager's *Buchhalten über proper, commission und compagnia Handlungen* (A Bookkeeping about individual, commission and company transactions) was published in Hamburg in 1624. Hager was born in Frankenberg, Saxony, in 1584 and went to Hamburg in 1610 and died in Hamburg in 1657. He was employed by many important merchants in his youth and studied bookkeeping. Hager's bookkeeping system is based on the double-entry bookkeeping theory in Northern Germany, which Gammersfelder and Goessens introduced from Italy. He classifies merchant's business into three transactions, that is, individual, commission and company transactions. He explains and illustrates a secret book (an inventory book), a day book, a journal, a ledger and eight kinds of subsidiary-account books. His profit and loss calculation method is similar to the method of Gammersfelder and Goessens. The profit or loss of the merchandise, venture and interest etc. are transferred to the profit and loss account. The balance of the profit and loss is transferred to the capital account which is transferred to the balance account.

And he tests the verification of calculation of profit and loss by comparing the profit or loss with the difference of the two capitals.

Hager's work has two characteristics.

First, he showed an example of a day book. Pacioli explains a day book but Manzoni, who made an example of the theory of Pacioli, did not give the example of a day book in his book. And we can't see the example of the day book in Schweicker's work which is based on Manzoni's work and Pacioli's treatise. Gammersfelder and Goessens did not show an example of a day book, although they say that it is very important.

Second, Hager explains and illustrates eight kinds of subsidiary

account books. These include the cash book (Cassa-Buch), the expense book (Unkostbuch), the balancing book (Saldir und Balanzir-Buch), the calculation book (Calculation Buch) etc. Gammersfelder and Goessens mentioned the subsidiary-account books, but they did not illustrate them. Penndorf writes that the best known German writer on bookkeeping in the seventeenth century was Hager. Woolf says that the German account books have given place to those prescribed by the Italian writers.

The History of work of bookkeeping in Germany in the 17th century was begun by Hager in Hamburg. And Hager has much influence on later works of bookkeeping in Germany.

Chapter 11 The Theory of Bookkeeping in Schurtz's Work

Summary

German works on bookkeeping in the 17th century are not included in the discussion of the history of accounting. It is relatively unknown. It seems that the history of German accounting, which was highlighted in the 16th century, vanished into the dark in the 17th century. Brown, Woolf, Littleton, Waal and Kellenbenz don't discuss German accounting history of the 17th century. Even Penndorf, who discussed German works on bookkeeping in the 17th century, passes a negative judgment on the value of German accounting history of the 17th century. But it is a fact that German works on bookkeeping, such as Hager, Schurtz, Rademan and Hermling were published. And in Copenhagen, Dibbern wrote the work on bookkeeping in Germany during the 17th century.

Schurtz's first work, *General Instruction, Der Arithmetischen und Politischen Kunst*, was published in Nürnberg in 1662, and his second work, *Nutzbare Richtschnur der Löblichen Kauffmannschafft, Das ist: neuvermehrt-vollkommenes Buchhalten oder Gründliche*, was published in Nürnberg in 1695. There are some points of difference between the first work and the second work.

First, he showed a three-account-book system, the journal (Jornal), the debt book or the main book (Schuld Buch, Haupt Schuld Buch, Capital Buch, das grosse Buch) and the goods book (Capus, Guter Buch) in his first work, but he required in his second work three account books, the day book (Memorial), the journal (Journal) and the ledger (Schuld-Buch) about which Pacioli explained.

Second, although he explained the day book and did not show an example of it in his first work, he showed an explanation and example of the day book as the formal account book.

Third, Schurtz used the word, the secret book (Geheimbuch) account instead of the capital account in his first work, but he introduced the

word, the capital account, in his second work.

Fourth, he used the words, "soll" and "soll haben" in his first work, but he adopted in his second work the words, "soll geben" and "soll haben". They are the same as the Italian, "die dare" and "die avere" about which Pacioli and Manzoni explained. It is evidence that he introduced the Italian bookkeeping system of Pacioli in his second work.

Fifth, although he did not use a line to classify between debit and credit in the journal in the first work, he adopted the special line (:/:) between debit and credit in the second work. Sixth, he classified merchandise into "Gewölb account" and various merchandise accounts in his first work, but in his second work he classified them into four accounts, "Gewölb" account, merchandise account, various merchandise accounts and various small cost merchandise accounts.

Schurtz explained the traditional German account-book system of Schreiber, Gottlieb and Wolff in his first work, but he adopted the Italian account-book system in his second work. Schurtz made it clear that the traditional account book system of Germany was in existence in the first half of the 17th century, and Pacioli's bookkeeping system replaced the traditional system at the end of the 17th century in Germany.

Chapter 12 Works on Bookkeeping of Hermling and Rademan

Summary

Hermling's *Vollkommenes Buchhalten /Das ist Deutliche...*, was published in Danzig in 1685, and Rademan's first work, *Ein Neues zur itzigen Kauf = und Handlung...*, was published in Hamburg in 1682 and his second work, *Der Wehrt – geschätzte Handels – Mann...*, was published in Hamburg in 1714.

First, I will try to explain the theories and examples of the accounting of the works of Hermling and Rademan and I will write some points of similarity and difference between the works of Hermling and Rademan. And then I want to make clear the value of accounting history in the works of the two authors. Hermling and Rademan explained and illustrated three accounting books, a day book, a journal and a ledger that Luca Pacioli explained.

Many works on bookkeeping such as those by Manzoni, Casanova and Moschetti in Italy, and Schweicker, Gammersfelder, and Goessens in Germany, were influenced by Pacioli but did not make the example of the daybook. The three-accounting-book system of the daybook, the journal and the ledger of Luca Pacioli was established as an accounting example in Germany in the 17th century.

Although Rademan showed the accounting example of the period of three years in his second work, Hermling and Rademan (in his first work) illustrated how to calculate the profit for the period of one year, that is from January to December.

Goessens adopted the method of calculating the profit and loss for the period of one year from January to December in North Germany in the 16th century, before Simon Stevin did in the Netherlands in the 17th century.

The concept of calculation of profit and loss of an accounting period of one year, which was adopted in Venice in the 15th and 16th century,

was established in Germany during the 16th and 17th century.

The method of the continental form of closing the ledger had great influence in the method of the closing ledgers of Hermling and Rademan. The methods of closing the ledger of Hermling and Rademan are not the same, but a little different.

Although they used the balance account and the profit and loss account in order to close the ledger, the content of their balance accounts was not the same. Hermling showed the balance account as a kind of balance sheet, but Rademan wrote the balance account as the total sheet.

It seems that the continental form of closing the ledger was not yet established in Germany in the 17th century.

Hermling adopted the warehouse (Speicher Raum) account in order to control various merchandise accounts. This warehouse account was a new method in the history of German accounting, because before Hermling's work, the various merchandise accounts were recorded individually.

Rademan classified all the merchant's business into three transactions, that is , personal transaction, commission transaction and company transaction by using Hager's work.

Hermling adopted Debet and An as the words for the debit side and credit side of the journal, Rademan used per and an. And Hermling and Rademan adopted the common words Debet and Credit as the words for the debit side and credit side of the ledger.

I think that German works on bookkeeping in the 17th century preserved the brilliant German bookkeeping theory that was built up in the 16th century, and had part in enabling it to continue until the 18th century.

Chapter 13 The Theory of Bookkeeping in Dibbern's Work — Drawing up of a working sheet —

Summary

Dibbern's *Gründliche Beschreibung des so gennanten Italianischen Kauffmännischen Buchhaltens* was published at Copenhagen in 1692. Although his work was published in Denmark, he wrote his work in German, and he explained the Italian bookkeeping system that was influenced by the traditional German bookkeeping.

I try to regard his work as German bookkeeping literature. His work has two characteristics.

First, he made and showed the working sheet that has three columns, that is a trial balance of the totals column, profit and loss account column and balance sheet column.

I have never found these working sheets before Dibbern. The working sheet that Dibbern devised makes an epoch in the history of accounting. Therefore Dibbern's work is very important, but the famous writers of the history of accounting, Fogo, Woolf, Penndorf, Waal, Littleton and Have did not even write about Dibbern.

Second, he succeeded and developed the traditional German bookkeeping system that Gammersfelder, Goessens, Hager, Rademan and Hermling explained. Dibbern classified a merchant's complete business into three transactions, that is, personal, commission and company transactions. They are the same that Hager and Rademan interpreted.

Although he explained three main books, a day book, a journal and a ledger, four subsidiary books, a cash book, a month book, a cost book, a calculation-and-advance book, a saldir and balance book, he illustrated the inventory, day book, journal, ledger, cash book, month book, calculation-and-advance book, profit and loss statement, balance sheet and the working sheet. He adopted a balance account and profit and loss account in order to close the ledger, and the transferring of

the entries of the closing ledger is carried out through the journal. Consequently, he had the thought of a continental form of closing the ledger.

And he drew up the profit and loss statement, and balance sheet through the working sheet, and he performed the calculation of profit and loss of the period. I can assert that Dibbern's bookkeeping work which was published in Copenhagen, is excellent literature that is based on the Italian bookkeeping method and compiled into the traditional German bookkeeping system in the 17th century.

Chapter 14 The Theory of Bookkeeping in Heyne's Work.

Summary

George Gottlob Heyne's *General Instruction des auf die neueste und kürztzeste Facon Italianischen Buch=Haltens*, was published in 1725. He adopts the word "Italian style of bookkeeping" in the title of his work. There are many works which have the word, "Italian style of bookkeeping" in the title, for example, Goessens, Lericé, Dibbern, Krügers, Meisner, Büsch, Hoff and Schematen. Although it is true that these works have many points of similarity concerning the Italian method of bookkeeping, they have many points of differences concerning the way of bookkeeping. It is clear that the method which was called Italian bookkeeping, was not a fixed form in Germany.

He explains three kinds of transactions, that is, individual transaction (Propre-Handlung), commission transaction (Commissions-Handlung), and company transaction (Compagnie-Handlung), but he adds factory transaction (Factory-Handlung) to three transactions in his example. The method of classifying a merchant's business into three transactions is similar to Hager, Rademan and Dibbern.

We understand that the method of classifying these three transactions took root in Germany from the seventeenth to the eighteenth century. He explains and illustrates three main account books, a day book, a journal, a ledger and about 10 kinds of subsidiary account books.

He makes two opening inventories in the day book and in the journal. The two opening inventories of two account books have points of differences. The inventory of the day book is made by single-entry bookkeeping, but the inventory of the journal is made by double-entry bookkeeping. The form of the opening inventory of the journal therefore is the same as the opening-balance sheet. He illustrated the opening inventory, the day book, the journal and the ledger that Pacioli discussed, as well as that of Goessens, Hager, Rademan and Dibbern.

I think that although he knew the custom of closing the ledger once a year, he used the accounting period of two months from January 1st to the end of February instead of once a year. He shows three kinds of commodity accounts.

The first is a special-commodity account, for example, tinsplate, cloth etc.

The Second is an all-commodities account and the third is the comparison of three kinds of accounts, that is, purchases, sales and inventory commodity. Although he adopted the original cost for valuation of assets, he executed physical inventory and deducted depletion loss of inventory from the original cost. He makes the closing inventory, the trial balance, the profit and loss statement and the balance sheet after closing the ledger. His financial statements are very significant in the history of accounting. Heyne's bookkeeping system is based on the Italian double-entry bookkeeping system in North Germany in the same way as those of Rademan, Hermling and Dibbern of the seventeenth century.

Chapter 15 The Theory of Bookkeeping in Magelsen's Work

Summary

Magelsen's *Die ersten Gründe des Buchhaltens, sammt Anwendung derselben auf die gewöhnlichsten Vorfälle der Handlung und Wirtschaft* was published in Altona in 1772. The distinguished merit that Magelsen accomplished in the history of accounting is that he explained about depreciation from the point of view of theory and practice. He discusses the theory of depreciation of movables in part of the explanation of his work and showed practical depreciation methods by way of example. The object of depreciation that Magelsen showed is not immovables, but movables, for example, silver product, gold and jewels etc. The valuation of immovables is decided by the value of currency at the time of closing the ledger. Although it is the best way to appraise each immovable and carry out unit appreciation, it is very difficult work. Therefore it is good to appraise all immovables together and execute composite depreciation. The depreciation rate should be decided by the condition of assets and experience of the past and it depends on the kind of movables, but it is a custom to take from 4% to 5%.

Although he does not discuss fully about the depreciation method in the pages of explanation, we can understand in detail about his practical depreciation method in the pages showing an example of his work. He executes depreciation of movables at the time when he closed the ledger five times a year. It is clear that depreciation is recorded at the end of each accounting period. His depreciation method is the diminishing balance method. Although he explains that the depreciation rate is from 4% to 5%, the depreciation rate that he showed in his example is 1.24 ~ 1.25% (1st, 2nd and 3rd closing ledger period), 1.59% (fourth) and 0.6% (fifth), and then the total rate of depreciation for one year is 5.92%. He does not record accumulated depreciation and subtracts depreciation expenses from the asset's book value. And he

records profit and loss account as depreciation expenses.

He classifies all accounts into three groups. First is the property account, second is the personal account and third is the transferring (or help) account. The property account contains cash account, movables account, immovables account, commodity account, ships-equity account, bill, draft and note account etc. The transferring account contains the balance account, profit and loss account, capital account, expense account and revenue account etc. He illustrates three main account books, a day book (memorial), a journal and a ledger and subsidiary-account books. He shows two opening inventories which were made by a double-entry bookkeeping method in the day book and in the journal. The form of inventories are the same as a balance sheet. Therefore we can call these opening inventories the opening-balance sheet.

Although Magelsen adopted the accounting period of one year, he closes the ledger five times a year. When there are more than two accounts in the journal, he uses "Nehmer" (on the debit side) and "Geber" (on the credit side) in order to put together more than two accounts. And these words, "Nehmer and Geber" are posted in the ledger, and these words are used in the ledgers frequently. Therefore we sometimes cannot comprehend the contents of transactions in the ledger. It is regrettable that Magelsen did not make any important financial statements.

Chapter 16 Three German Works on Bookkeeping published in 1781.

Summary

German works on bookkeeping in the 18th century have not been regarded as an important matter in the history of German accounting. But it is a fact that the works on bookkeeping, such as Habelium (1707), Marperger (1718), Hyne (1725), Magelsen (1772), Wolf (1774), Fleischer (1781), Krügers (1781), Flügel (1781) and Büsch (1792) etc. were published in Germany. The aim of this treatise is to try to make clear the value of German accounting history during the latter period of the 18th century by examining the three works of Fleischer, Krügers and Flügel that were published in Germany in 1781.

Krügers explained and illustrated the four-account-book system—that is, a day book, a cash book, a journal and a ledger as the Italian bookkeeping system which Wagner, Hoff, Schiebe and Ochs adopted in the 19th century in Germany. This four-account-book system was introduced in Japan as the German bookkeeping system by Prof. Michisuke Ueno and Prof. Kiyoshi Kurosawa in the 20th century.

Fleischer describes and illustrates the three-account-book system, that is, a day book, a journal and a ledger as the Italian bookkeeping system. This three-account-book system was also explained by Pacioli and Flügel.

Habelium, Hyne, Magelsen and Büsch adopted this three-account-book system in the 18th century in Germany. Although the Italian Bookkeeping system usually means this three-account-book system, there was the four-account-book system that is called the “Italian bookkeeping system”. Fleischer and Krügers explained and illustrated the general-merchandise account (General Waaren Conto) and Flügel described this account.

Marpelger explained the general-merchandise account, and Hyne and Magelsen had the same theory as Marpelger. Therefore we can know

that the concept of the general-merchandise account took root in the 18th century in Germany. Fleischer and Krügers showed the concept of the final physical inventory by market price basis in their accounting illustrations. The accounting period of the example of Fleischer's work is one year. Although Krügers gave the illustration of the accounting period of 6 months, Krügers claimed that the closing ledger should be carried out once every three months, six months or one year.

Flügel wrote that the balance sheet (Bilanz) should be made every month, or two or three times in one year, or every year. Although Krügers did not make the financial statement, he showed a profit and loss account and a general-balance account (General Bilanz).

Fleischer illustrated a trial balance of totals and balances, and the balance before closing the ledger and the balance after closing the ledger that is equal to the balance sheet. Flügel made a detailed explanation of the balance account and balance sheet as the financial statement.

Chapter 17 The Theory of Bookkeeping in Stevin's Work
– From the point of view of the history of German bookkeeping –

Summary

Many accounting historians have given high appraisal to Simon Stevin. Fogo wrote that Stevin ranks with Pacioli. Yamey described Stevin as a man with a reputation as a multiple genius in mathematics, natural philosophy, physics and engineering, and he is even more famous than Pacioli. De Waal claimed that the development of the theory of bookkeeping until the nineteenth century, was based on Pacioli and Stevin. Stevin's work on bookkeeping, entitled *Vorstelicke Bouckhouding* in Dutch and *Livre de Compte* in French, was published in 1607 and 1608.

Stevin stated the theory and theorem of double-entry bookkeeping in his book and he attempted to explain the principles for analysing transactions into debit and credit. Stevin failed when he tried to answer a prince's question about the capital account and Stevin made a mistake in his explanation concerning the profit and loss account. But he played an important part in the development of bookkeeping. He used the "several entries" in the journal and ledger, which is an early example in the history of accounting. He gave an illustration of two account books, journal and ledger by the traditional Italian bookkeeping system that Manzoni, Casanova, Schweicker, Gammersfelder, Sartorium, Goessens, Peel, Melis, Wedington, Ympyn and Dycke showed.

Stevin illustrated the profit and loss calculation of one year from January to December, and Stevin wrote that it is customary to ascertain the profit or the loss of the business once a year. But Petri, Sartorium and Goessens showed an example of the profit or loss of one year from January to December before Stevin, therefore he is not the first writer who showed or explained the calculation of profit and loss of the period of one year at the end of the year.

Stevin used the capital account in order to close the ledger. The balance of the assets account and liability account, not including cash, is transferred to the capital account at the end of a year. Therefore the amount of the capital account and the cash account is the same. The same procedure of closing the assets and liability, not including cash, into the capital account, is seen in the books by Mennher and Schwarz, which showed the example of the agency bookkeeping. I don't understand the reason why Stevin did not adopt the balance account, because he illustrated a capital-bookkeeping system.

Stevin made the "staet" (or balance) and the "staetproof" (or balance proof) from the capital account and the profit and loss account, but I don't understand the reason why the debit side and credit side of the staet is contrary to the debit side and credit side of the capital account.

Although Stevin explained the day book, he did not illustrate it, and he did not explain and illustrate the inventory that Pacioli explained. He did not close the entries of the ledger through the journal. He explained not only mercantile accounts but also public accounts for Prince Maurice, but he did not give an illustration to interpret the idea on public accounts. The beginning day of the translation of his account example (or illustration) is zero day. I think it is a good idea that the point between December 31st and January 1st is zero day.

Stevin thought that the double-entry bookkeeping system was invented by the Romans or the Greeks. Stevin was a great scientist, but Stevin falls short of his predecessors in some points of accounting and he made a mistake in the accounting procedure. I agree with Fogo's opinion that Stevin's immediate successors are small folks, and I think that Stevin did not have influence on the history of accounting in Germany.