# History of Accounting

## Ancient Accounting: Dawn Of Man Through Pacioli

In attempting to explain why double entry bookkeeping developed in 14th century Italy instead of ancient Greece or Rome, accounting scholar A. C. Littleton describes seven "key ingredients" which led to its creation:

- Private property: The power to change ownership, because bookkeeping is concerned with recording the facts about property and property rights.
- Capital: Wealth productively employed, because otherwise commerce would be trivial and credit would not exist.
- Commerce: The interchange of goods on a widespread level, because purely local trading in small volume would not create the sort of press of business needed to spur the creation of an organized system to replace the existing hodgepodge of record-keeping.
- Credit: The present use of future goods, because there would have been little impetus to record transactions completed on the spot.
- Writing: A mechanism for making a permanent record in a common language, given the limits of human memory.
- Money: The "common denominator" for exchanges, since there is no need for bookkeeping except as it reduces transactions to a set of monetary values.
- Arithmetic: A means of computing the monetary details of the deal.

Many of these factors did exist in ancient times, but, until the Middle Ages, they were not found together in a form and strength necessary to push man to the innovation of double entry. Writing, for example, is as old as civilization itself, but arithmetic – the systematic manipulation of number symbols – was really not a tool possessed by the ancients. Rather, the persistent use of Roman numerals for financial transactions long after the introduction of Arabic numeration appears to have hindered the earlier creation of double-entry systems.

Nevertheless, the problems encountered by the ancients with record keeping, control and verification of financial transactions were not entirely different from our current ones. Governments, in particular, had strong incentives to keep careful records of receipts and disbursements – particularly concerning taxes. And in any society where individuals accumulated wealth, there was a desire by the rich to perform audits on the honesty and skill of slaves and employees entrusted with asset management.

But the lack of the above-listed antecedents to double entry bookkeeping made the job of an ancient accountant extraordinarily difficult. In societies where nearly all were illiterate, writing materials costly, numeration difficult and money systems inconsistent, a transaction had to be extremely important to justify keeping an accounting record.

## Accounting In Mesopotamia, Circa 3500 B.C.

Five thousand years before the appearance of double entry, the Assyrian, Chaldaean-Babylonian and Sumerian civilizations were flourishing in the Mesopotamian Valley, producing some of the oldest known records of commerce. In this area between the Tigris and Euphrates Rivers, now mostly within the borders of Iraq, periodic floodings made the valley an especially rich area for agriculture.

As farmers prospered, service businesses and small industries developed in the communities in and around the Mesopotamian Valley. The cities of Babylon and Ninevah became the centers for regional commerce, and Babylonian became the language of business and politics throughout the Near East. There was more than one banking firm in Mesopotamia, employing standard measures of gold and silver, and extending credit in some transactions.

During this era (which lasted until 500 B.C.), Sumeria was a theocracy whose rulers held most land and animals in trust for their gods, giving impetus to their record-keeping efforts. Moreover, the legal codes that evolved penalized the failure to memorialize transactions. The renowned Code of Hammurabi, handed down during the first dynasty of Babylonia (2285 - 2242 B.C.), for example, required that an agent selling goods for a merchant give the merchant a price quotation under seal or face invalidation of a questioned agreement. Thus it is believed that most transactions were recorded and subscribed by the parties during this period.

The Mesopotamian equivalent of today's accountant was the scribe. His duties were similar, but even more extensive. In addition to writing up the transaction, he ensured that the agreements complied with the detailed code requirements for commercial transactions. Temples, palaces and private firms employed hundreds of scribes, and it was considered a prestigious profession.

In a typical transaction of the time, the parties might seek out the scribe at the gates to the city. They would describe their agreement to the scribe, who would take from his supply a small quantity of specially prepared clay on which to record the transaction. Clay was plentiful in this area, while papyrus was scarce and expensive.

The moist clay was molded into a size and shape adequate to contain the terms of the agreement. Using a wooden rod with a triangular end, the scribe recorded the names of the contracting parties, the goods and money exchanged and any other promises made. The parties then "signed" their names to the tablet by impressing their respective seals. In an age of mass illiteracy, men carried their signatures around their necks in the form of stone amulets engraved with the

wearer's mark, and were buried with them at death. Often the seals included the owner's name and religious symbols, such as the picture and name of the gods worshipped by the owner.
After these impressions from the amulets were made, the scribe would dry the tablet in the sun or in a kiln for important transactions which needed a more permanent record. Sometimes a clay layer about as thick as a pie crust was fashioned and wrapped around the tablet like an envelope. For extra security, the whole transaction would be rewritten on this outer "crust," in effect making a carbon copy of the original. Attempted alterations of the envelope could be detected by comparing it with its contents, and the original could not be altered without cracking off and destroying the outer shell.

## Accounting In Ancient Egypt, China, Greece & Rome

Governmental accounting in ancient Egypt developed in a fashion similar to the Mesopotamians. The use of papyrus rather than clay tablets allowed more detailed records to be made more easily. And extensive records were kept, particularly for the network of royal storehouses within which the "in kind" tax payments were kept.
Egyptian bookkeepers associated with each storehouse kept meticulous records, which were checked by an elaborate internal verification system. These early accountants had good reason to be honest and accurate, because irregularities disclosed by royal audits were punishable by fine, mutilation or death. Although such records were important, ancient Egyptian accounting never progressed beyond simple list-making in its thousands of years of existence. Perhaps more than any other factors, illiteracy and the lack of coined money appear to have stymied its development.
While the Egyptians tracked movements of commodities, they treated gold and silver not as units of fungible value, but rather as mere articles of exchange. The inability to describe all goods in terms of a single valuation measure made cumulation and summation difficult and the development of a cohesive accounting system all but impossible.
Pre-Christian China used accounting chiefly as a means of evaluating the efficiency of governmental programs and the civil servants who administered them. A level of sophistication was achieved during the Chao Dynasty (1122 - 256 B.C.), which was not surpassed in China until after the introduction of double entry processes in the 19 century.
In the 5th century B.C., Greece used "public accountants" to allow its citizenry to maintain real authority and control over their government's finances. Members of the Athens Popular Assembly legislated on financial matters and controlled receipt and expenditure of public monies through the oversight of 10 state accountants, chosen by lot.
Perhaps the most important Greek contribution to accountancy was its introduction of coined money about 600 B.C. Widespread use of coinage took time, as did its impact on the evolution of accounting. Banking in ancient Greece appears to have been more developed than in prior societies. Bankers kept account books, changed and loaned money, and even arranged for cash transfers for citizens through affiliate banks in distant cities.
Government and banking accounts in ancient Rome evolved from records traditionally kept by the heads of families, wherein daily entry of household receipts and payments were kept in an *adversaria* or daybook, and monthly postings were made to a cashbook known as a *codex accepti et expensi*. These household expenses were important in Rome because citizens were required to submit regular statements of assets and liabilities, used as a basis for taxation and even determination of civil rights.
An elaborate system of checks and balances was maintained in Rome for governmental receipts and disbursements by the *quaestors*, who managed the treasury, paid the army and supervised governmental books. Public accounts were regularly examined by an audit staff, and *quaestors* were required to account to their successors and the Roman senate upon leaving office.
The transition from republic to empire was, at least in part, to control Roman fiscal operations and to raise more revenues for the ongoing wars of conquest. While the facade of republicanism was maintained, the empire concentrated real fiscal and political power in the emperor. Julius Caesar personally supervised the Roman treasury, and Augustus completely overhauled treasury operations during his reign.
Among Roman accounting innovations was the use of an annual budget, which attempted to coordinate the Empire's diverse financial enterprises, limited expenditures to the amount of estimated revenues and levied taxes in a manner which took into consideration its citizens' ability to pay.

## Medieval Accounting

The thousand years between the fall of the Roman Empire and the publication of Luca Pacioli's *Summa* are widely viewed as a period of accounting stagnation, and medieval practices outside Italy are often ignored in historical summaries. Yet, as historian Michael Chatfield has observed, medieval agency accounting, "laid the foundations for the doctrines of stewardship and conservatism, and the medieval era created the conditions for the rapid advance in accounting technology that occurred during the Renaissance."
While accounting under the Roman Empire was prescribed by the centralized legal codes of the time, medieval bookkeeping was localized and centered on the specialized institutions of the feudal manor. The systems of exchequer and manor necessitated numerous delegations of authority over property from the owners to actual possessors and users. The central task of accounting during this era was to allow the government or property owners to monitor those in the lower portions of the socio-economic "pyramid."
When William the Conqueror invaded England, he took possession of all property in the name of the king. In 1086, he conducted a survey of all real estate and the taxes due on them, known as the *Domesday Book*. The oldest surviving accounting record in the English language is the Pipe Roll, or "Great Roll of the Exchequer," which provides an annual description of rents, fines and taxes due the King of England, from A.D. 1130 through 1830.

Compiled from valuations in the *Domesday Book* and from statements of sheriffs and others collecting for the royal treasury, the Pipe Roll was the final record on parchment of a "proffer" system which extensively used a wooden stick as a basis of account-keeping. Twice a year, at Easter and Michaelmas (September 29), the various county sheriffs were called before the Exchequer at Westminster. At Easter, a sheriff would pay about half of the total annual assessments his county owed. In accepting a sheriff's payment on account (the proffer), the treasurer would have a wooden tally stick prepared and cut as a record of the transaction.

Used even before the introduction of the Pipe Roll, the tally stick was a nine-inch long, narrow, hazelwood stick, cut with notches of varying size to indicate the amount received. A cut the size of a human hand was 1,000 pounds; a thumb's width, 100 pounds; a cut the thickness of a "grain or ripe barley," one pound; and a shilling, just a notch.

Chatfield describes the way in which the tally stick was used to make a receipt in an age when few could read or write: After the amount of the sheriff's proffer had been carved, a diagonal cross cut was made an inch or two from the thicker end of the tally, and the whole stick was split down the middle into two identically notched parts of unequal length. The flat sides of both pieces were inscribed in Latin to show that they related to the same debt, and as additional protection, the cross cuts were made at various angles on different tallies, so that no "foil" or shorter piece could possibly be fitted to any "stock" but its own. The sheriff then departed with the stock as his receipt for payments rendered, and the foil was kept by the treasurer for the Exchequer archives.

At Michaelmas, each sheriff returns for the final accounting, at which he pays the whole year's revenues. The treasurer reads the amount due from the Pipe Roll, and the sheriff must justify any unusual expenses claimed. Final settlement occurs at a table covered by a checkered cloth, for which the Exchequer is named. "Counters" are placed on the squares to visually represent the amount due the king from that county. Another row of counters represents the Easter payment, which is verified by fitting together the sheriff's tally stock with the Exchequer's foil to demonstrate that the notches and cuttings correspond.

## Italian Renaissance: Birth of Double Entry

The innovative Italians of the Renaissance (14th -16th century) are widely acknowledged to be the fathers of modern accounting. They elevated trade and commerce to new levels, and actively sought better methods of determining their profits.

Although Arabic numerals were introduced long before, it was during this period that the Italians became the first to use them regularly in tracking business accounts – an improvement over Roman numerals the importance of which cannot be overstated. They kept extensive business records, as the use of capital and credit on a large scale developed: The evolutionary trend toward double entry bookkeeping was underway.

## Luca Pacioli And The Summa

Luca Pacioli was a true Renaissance man, with knowledge of literature, art, mathematics, business and the sciences, at a time when few could even read. Born about 1445 at Borgo San Sepulcro in Tuscany, Frater Luca Bartolomes Pacioli acquired an amazing knowledge of diverse technical subjects – religion, business, military science, mathematics, medicine, art, music, law and language. He accepted the popular belief in the inter-relatedness of these widely varying disciplines and in the special importance of those, such as mathematics and accounting, which exhibit harmony and balance.

His friend Leonardo da Vinci helped prepare the drawings for Pacioli's 1497 work, *Divina Proportione*; In turn, Pacioli is reputed to have calculated for da Vinci the quantity of bronze needed for the artist's huge statue of Duke Lidovico Sforza of Milan.

Around 1482, after completing his third treatise on mathematics, Pacioli, who like many of his time sought preferment as a teacher, became a Franciscan friar. He traveled throughout Italy lecturing on mathematics, and, in 1486, completed his university education with the equivalent of a doctorate degree.

Pacioli never claimed to have invented double entry bookkeeping. Thirty-six years before his monumental treatise on the subject, Benedetto Cotrugli wrote *Delia Mercatura et del Mercante Perfetto (Of Trading and the Perfect Trader)*, which included a brief chapter describing many of the features of double entry. Although this work had not been published for more than a century, Pacioli was familiar with the manuscript and credited Cotrugli with originating the double entry method.

Pacioli was about 50 years old in 1494 – just two years after Columbus discovered America – when he returned to Venice for the publication of his fifth book, *Summa de Arithmetica, Geometria, Proportioni et Proportionalita (Everything About Arithmetic, Geometry and Proportion)*. It was written as a digest and guide to existing mathematical knowledge, and bookkeeping was only one of five topics covered.

The *Summa*'s 36 short chapters on bookkeeping, entitled "De Computis et Scripturis" ("Of Reckonings and Writings"), were added, "in order that the subjects of the most gracious Duke of Urbino may have complete instructions in the conduct of business," and to, "give the trader without delay information as to his assets and liabilities." (All quotes from the translation by J.B. Geijsbeek, "Ancient Double Entry Bookkeeping: Lucas Pacioli's Treatise," 1914).

Perhaps the best proof that Pacioli's work was considered potentially significant, even at the time of publication, was the very fact that it was printed on November 10, 1494. Gutenberg had, just a quarter century earlier, invented metal type, and it was still an extremely expensive proposition to print a book.

## Pacioli's System: Memorandum, Journal and Ledger

"De Computis" begins with some basic instruction for commerce. The successful merchant, declares Pacioli, needs three things: sufficient cash or credit, good bookkepers and an accounting system which allows him to view his finances at a glance. Before commencing business, one should prepare an inventory listing all business and personal assets and debts. This inventory must be completed within one day, and property should be appraised at current market values and arranged according to mobility and value, with cash and other valuables listed first since they are most easily lost.

The memorandum, or memorial, was Pacioli's equivalent of a daybook, for the recording, in chronological order, of business transactions as they occurred. The transaction could be entered in any of the various monetary units then in use in the Italian city-states of the time, with conversion to a common currency for double entry left for later.

The journal was the merchant's private account book. Entries consisted of a narrative debit, credit and explanation in one continuous paragraph. The journal had only one column, which was not totaled. There were no compound entries.

Pacioli's ledger was, of his three books, the most like its modern equivalent. The money and date columns were almost identical to those in modern ledgers, with entries consisting of brief paragraphs, debits on the left side of a double page (*deve dare*) and credits on the right (*deve avere*).

The bookkeeper posts "cash in hand" as a debit on page one of the ledger, just as it was entered first in the journal. As ledger postings are made, two diagonal lines are drawn through each journal entry, one from left to right when the debit is posted and the other from right to left when the credit is posted.

The first 16 chapters of "De Computis" describe this basic system of books and accounts, while the remaining 20 are devoted to specialized accounting issues of merchants. These include bank deposits and withdrawals, brokered purchases, drafts, barter transactions, joint venture trading, expense disbursements and closing and balancing books.

The trial balance (*summa summarium*) is the end of Pacioli's accounting cycle. Debit amounts from the old ledger are listed on the left side of the balance sheet and credits on the right. If the two totals are equal, the old ledger is considered balanced. If not, says Pacioli, "that would indicate a mistake in your Ledger, which mistake you will have to look for diligently with the industry and intelligence God gave you."

## Significance of the Summa

In the first century after its publication, the *Summa* was translated into five languages, and numerous books on double entry bookkeeping appeared in Dutch, German, English and Italian whose descriptions were obviously lifted from "De Computis." Many consider these works inferior explanations of the system so clearly articulated by Pacioli.

One historian has described the works issued during this period as, "at the best, revisions of Pacioli, at the worst servile transcriptions without even the courtesy of referring to the original author." Nevertheless, they helped quickly spread the knowledge of the "Italian method" throughout Europe.

Perhaps most surprising is how little bookkeeping methods have changed since Pacioli. Both the sequence of events in the accounting cycle and the special procedures he described in "De Computis" are familiar to modern accountants. In fact, the primary differences between current bookkeeping practices and the "Method of Venice" are additions and refinements brought about by the needs of a larger scale of business operation.

The small proprietorships of 15th century Italy had no need for specialized journals, subsidiary ledgers, controlling accounts, formal audit systems, cost accounting or budgeting. Some omissions, such as the failure to touch on accruals and deferrals, probably occurred because Pacioli felt they were too advanced for a beginner's treatise. But numerous tiny details of bookkeeping techniques set forth by Pacioli were followed in texts and the profession for at least the next four centuries, as accounting historian Henry Rand Hatfield put it, "persisting like buttons on our coat sleeves, long after their significance had disappeared."

## Accounting History Bibliography


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