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ACCOUNTING TECHNIQUES IN KOREA: 18TH CENTURY ARCHIVAL SAMPLES FROM A NON-PROFIT ASSOCIATION IN THE SINITIC WORLD

Abstract: Little is known about pre-1900 East Asian accounting techniques. A double-entry method of accounting may date from the 11th century in Korea, but extant commercial ledgers are no older than 1854. However, extensive accounts of cooperative associations survive from the early 18th century. The Mun Clan Association accounts are examined to reveal their organizing principles and accuracy. The accounts demonstrate a highly accurate system that was intermediate between single-entry and double-entry accounting. While they are not from a commercial house, the accounts display sophisticated bookkeeping techniques designed to maximize rationality within a Confucian moral economy.

INTRODUCTION

In recent years, the Academy of Korean Studies (Han'guk Chŏngsin Munhwa Yŏn'guwŏn)[1] has gathered and published many private records and documents from post-1600 Korea, but there has been little research on these documents from the perspective of accounting and economic history. This paper examines a double-entry method used in the accounts (1741-1883) of the (Namp'yŏng) Mun Clan Association (MCA),[2] an organization that is still active in Chŏlla Province. The MCA is representative

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[1]The Korean name was changed in February 2005 to Han'gukhak Chung'ang Yŏn'guwŏn, retaining the English name Academy of Korean Studies.

[2]Please refer to the Glossary (Appendix A) for original script and characters.

of a major civil-society organization in pre-20th century Korea, the cooperative, mutual-aid society (*kye*).

Although a study in accounting history, the research on which this paper is based had roots in economic history. Information on commodity prices, labor costs, land and rental costs, and a number of other types of basic data have been collected in order to build models of Korean economic history. In the course of exploiting the data, decisions had to be made about their trustworthiness, leading to an analysis of the accounting principles at work. A high degree of sophistication and accuracy is evident, thus providing confidence in the quality of the extracted data [Jun and Lewis, 2005, 2006].

The MCA accounts were far more elaborate than simple, single-entry records. They reveal a complex linkage across several separate commodities used as currency, including unhulled rice, milled rice, and copper coin. Transactions in the ledgers were recorded in two different places. Many of the basic principles of the double-entry method are apparent – personification of accounts, dual entry, integration, and periodicity. All the ledgers contain only real accounts; nominal accounts and profit-or-loss statements are absent. A concern for controlling losses is evident, while a corresponding lack of emphasis on profit-making reflects the dominant ethic, the Confucian "moral economy." The paper features, in order, a literature review, a discussion of the moral economy concept, a description of the MCA ledgers, and a summary of the findings.

LITERATURE REVIEW

The Sinitic world of East Asia is the oldest, continuous civilization on the planet, but very little is known of its accounting practices or economic history. However, accounting historians have attempted to address this lack of knowledge in recent years. Auyeung [2002, pp. 3, 5-7, 10-12; Auyeung and Ivory, 2003, pp. 9-12] offers an overview of traditional Chinese and Japanese accounting practices. There are a number of useful studies on accounting in China [Huh, 1979; Hsu, 1991; Gardella, 1992; Lin, 1992, 2003; Aiken and Lu, 1993, 1998; Chen, 1998; Gao and Handley-Schachler, 2003] and several on Japan [Nishikawa, 1956, 1977; McKinnon, 1994; Nisikawa, 1994; Someya, 1996]. There is at least one study on Korea [Yun, 1977]. It can be argued that most of these efforts suffer from insufficient detailed evidence to explain traditional usages before the adoption of western methods. An exception is Aiken and Lu [1998]. Many

studies ignore historical or interpretative problems, though again, there are welcome exceptions [Gardella, 1992; Aiken and Lu, 1993, 1998; Chen, 1998; Auyeung, 2002; Auyeung and Ivory, 2003]. All previous studies are primarily concerned with governmental practices or commercial establishments.

Commercial activity in East Asia has a long history, but premodern Korean mercantile records are few. In fact, there are no known surviving commercial accounts dated earlier than the mid-19th century. Nevertheless, it is often asserted that Korean merchant houses in Kaesŏng City traded with China and Arabia and developed, as early as the mid-Koryŏ period (11th-13th centuries), a double-entry method known as the *sagae Songdo ch`ibubŏp* (four-sided Kaesŏng ledger method). Information on the system is available in Korean [Hyŏn, 1916; Hong, 1962; Kang, 1978; Yun, 1978, 1984; Cho, 2000], Japanese [Zenshō, 1968; Yoshida, 1988,[3] 1999], and outlined in English [Yun, 1977]. The system is "four-sided" because it recorded the receiver's name, the giver's name, the commodity or cash received, and the commodity or cash disbursed. Fundamentally, the method required a dual entry for each transaction.

The four-sided method may have been centuries old, but direct evidence for it is more recent so that its "origins" remain a matter for speculation [Yoshida, 1988, pp. 147-150]. Yoshida [1988, pp. 137-140; 1999, p. 73] points out that all studies rely primarily on a few privately obtained account books, a 1916 accounting primer, and early 20th century ledgers (1898-1906) kept by the Taehan Ch'ŏn'il Bank in Seoul.[4] Yoshida [1999, p. 68] notes that some privately obtained account books held at the Kobe University Library concern a Kaesŏng merchant dating back to 1854. None of these documents can confirm the alleged mid-Koryŏ origins of the method. The 1916 primer and the ledgers from 1898-1906 have been analyzed in detail, but the older books are not well known and offer no direct evidence of a method in *general* use predating the opening of Korean ports to modern trade in 1876.

The 1916 primer deserves further explanation. By the late 19th and early 20th centuries, there was widespread dislocation as Korean society lurched headlong into the international

[3]Yoshida [1988, pp. 133-134] offers an extensive review of Japanese scholarship on this issue.

[4]The Taehan Ch'ŏn'il Bank was founded in January 1899. It has been known by many names; e.g., Chōsen Sangyō Bank (1911), Han'guk Sang'ŏp Bank (1950), combined with Han'il Bank (1998), Han'pit Bank (1999), absorbed by P'yŏnghwa Bank (2001), and Uri (Woori) Bank (2002).

market economy. Because the double-entry methods of the West had not yet penetrated Korean commerce and because there was general disarray in the Korean accounting world, a standard method was sorely needed.[5] In 1916, Hyŏn consulted with two Kaesŏng merchants and authored a primer describing their four-sided ledger method. Hyŏn's primer outlines an indigenous, double-entry method in which he defines terms and offers examples. There are modern elements in the primer, such as the use of Japanese terms [Yoshida, 1988, p. 139], the use of *yen* and *zeni* (Japanese monetary denominations), and the use of the zero as a place marker. Moreover, the question of Chinese influence deserves consideration. The presentation of accounts on the pages of the 19th century Korean commercial ledgers is similar to the style in the illustrations that accompany this paper. Because entries are not made in a similar fashion to Chinese entries with a single page divided into top and bottom [Aiken and Lu, 1998, pp. 228, 232], and because the terminology is completely different, it seems that the Korean methods were not derived from Chinese accounting. Nevertheless, there are striking similarities to the Chinese *Lóngmén* bookkeeping system, a prime topic for future investigation.

Although we have Hyŏn's exposition of this indigenous practice, the problem remains that there are few available specimens of accounts that predate the 1850s that can confirm the general use of the method. Zenshō [1968, p. 119] reports that, in 1921, when he was conducting a study of Korean accounting for the Japanese colonial authorities, he saw account books in a library in Kaesŏng City dating from the 1770s that used a four-sided ledger method, but he was only able to obtain books from the Gūanxù period (1875-1908) for his personal collection and analysis. In addition, a North Korean researcher [Hong, 1962] has investigated accounts from at least 1798, which are part of the Kaesŏng City Museum archives [Hong, 1962, p. 58; Yoshida, 1988, p. 155, note 44]. Hong [1962, pp. 54, 59] also refers to accounts from the early 1820s in the Kaesŏng University of Politics and Economics (Songdo Chŏngch'i Kyŏngje Taehak). These account books may still be extant in Kaesŏng (presently in North Korea), but it has not yet been possible to gain access, much less to verify their existence.

The extant accounts of commercial and banking organiza-

[5]The period from 1876 to 1910 or 1920 in Korea may offer a parallel case for the Weberian analysis of late Qing Chinese accounting by Auyeung and Ivory [2003] comparing "formal" and "substantive" rationalities.

tions from the mid-to-late 19th century are reputed to be based on a dual-entry system, but Yoshida [1999, p. 72] merely says that the 1854 debit and credit ledgers in Kobe University Library are "sister ledgers" (*shimai chōbo*) and that they alternately record debits and credits for the same period. Yoshida does not supply sufficient detail to confirm the method used, and we have not been able to examine these books ourselves. While there are questions about the principles underlying the system, the current understanding is represented by Hong [1962, pp. 57-58], Zenshō [1968, p. 119], Kang [1978, p. 89], Yun [1978, p. 99, 1984, p. i], and Yi [2001, p. 3], who argue that the four-sided ledger system is comparable to the Venetian "double-entry" system, is possibly older, and perhaps even more elegant.

On the other hand, Cho [2000, pp. 300-302] argues that the extant materials do not justify describing the system as double entry. He doubts that such a sophisticated system was possible in East Asia where Arabic numerals were not used and the Chinese script lacked the zero. Yoshida withholds judgment on the principles at work and objects to Korean claims to the "world's oldest double-entry method" when based on evidence no older than 1854.

Promoters of such claims often link their assertions to developmental economic models arguing for the indigenous appearance of capitalism in Korea [Hong, 1962, pp. 50, 54-57]. Yoshida [1999, p. 74] correctly criticizes the conflation of a supposedly medieval dual-entry method with arguments about the early appearance of capitalism in Korea. Linking sophisticated accounting systems in East Asia to capitalism, something that is ill-defined at best for these different historical and social orders, does no more than echo the host of 19th and 20th century claims for European exceptionalism in developing capitalism based on double-entry accounting [Weber, 1927, p. 275; Spengler, 1928, p. 490; Braudel, 1983, p. 573; Gardella, 1992, pp. 317-319].

Nevertheless, the system described in Hyŏn's 1916 primer and the practices that appear in surviving ledgers certainly present us with a number of questions about accounting method. In this paper, we will not discuss the method outlined in Hyŏn's primer because there is the possibility that it was influenced by Japanese systems and does not reflect traditional methods. In order to confirm the existence of an indigenous Korean system and to ascertain its principles, it is necessary to identify older examples from various organizations, both commercial institutions and non-commercial establishments. This paper examines

a case that clearly predates direct Korean contact with the West or with the West as mediated by Japan from 1876.

The ledgers of the MCA represent some of the oldest accounting books available. They are the accounting records of a non-profit, cooperative association. The shared terminology between Hyŏn's 1916 text, the MCA ledgers, and other similar material also recently made available[6] is striking and suggests the widespread use of a traditional style of accounting. The predominance of the accounts of non-profit organizations corroborates qualitative information on the general attitudes of pre-20th century Koreans. Merchant houses were socially inferior and treated with suspicion. By contrast, cooperative, non-profit organizations were socially acceptable, commonplace, and free of government control. Their accounts have been carefully preserved for centuries.[7]

MORAL ECONOMY

The dynamic between accounting methods and the political and socio-economic environment has been explored by Loft [1986], Hopwood [1987], Hopwood and Miller [1994], and others for Britain, and by Aiken and Lu [1993, 1998], Chen [1998], Bloom and Solotko [2003], and others for China. The notion that accounting methods are merely an inert technology is quite defunct. In pre-1876 Korea, the prejudice against commercial activities and the social acceptance of ubiquitous cooperative associations were aspects of a socio-economic ethic that we refer to as the "moral economy" of pre-modern Korea. Our purpose in this paper is to analyze an indigenous Korean, double-entry *method*, not to offer deterministic cultural explanations for its use. However, we find that the concept of moral economy is useful in explaining significant parts of the *content* of the accounts presented below and of the *method* applied. We cannot yet show how the method *shaped* organizational and societal change since our sample is too narrow, but we can show how the method clearly *responded* to societal concerns.

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[6]There are similar data available from the Haenam Yun clan (1846-1882), also from Chŏlla Province, and from the Yongsan Sŏwŏn (Yongsan Academy, 1700-1705) in Kyŏngsang Province. For the Haenam Yun clan, see Han'guk Chŏngsin Munhwa Yŏn'guwŏn (ed.) [no date], library microfilm no. 35-003212 and no. 35-003213. For the Yongsan Sŏwŏn, see Han'guk Chŏngsin Munhwa Yŏn'guwŏn (ed.) [2000, pp. 721-809].

[7]Clan account books in China have been mined as rich sources for the history of prices but not yet analyzed for their accounting method. For example, rice prices from clan records for 1684 to 1802 have been published by Tanaka [1986].

Many scholars have outlined moral economies in other historical settings [Polyani, 1944; Wolf, 1969; Scott, 1976; North, 1977; Popkin, 1979; Thompson, 1993], but few have examined the concept's applicability to China, much less Korea. Certainly, in Korea (and northeast China), the dominant moral ethic (Confucianism) was an ideological construction that fit an agricultural economy as practiced in a volatile ecological zone plagued by severe winters and devastating summer flooding. Unlike the north China plain, Korea is very mountainous and had no comprehensive state-run irrigation works, so a "hydraulic society" with extensive centralized powers did not arise [Wittfogel, 1957]. The political philosophy of Confucianism, particularly the Neo-Confucianism that appeared from the 13th century, was the systematic exposition of a moral economy and was well suited to Korean environmental constraints. It preached a social contract of localized mutual interdependence, ultimate government responsibility for subsistence, and interpersonal relations based on sincerity and clarity with fair and accurate accounting in transactions. These are a few of the practical reasons why Confucianism excoriated commerce. Gao and Handley-Schachler [2003, pp. 49-50] point out the overlap between Confucianism and Buddhism in their distrust of the profit motive. To a Confucian, profit pitted individuals against the collective. To a Buddhist, profit led to the illusion of material desire and the perpetuation of suffering. Of course, such normative principles did not preclude a concern with cost and profit in production [Ji, 2003]; yet, the pursuit of profit was a stigmatized activity.

Indications of the concerns and practices of a Confucian moral economy can be glimpsed in the MCA accounts – relief for economically weaker members, insurance for all, and no apparent concern with profit. In other words, the 18th century context for the books examined below is one in which local society was deeply imbued with cooperative principles, nearly every individual was part of a web of cooperatives, and commerce was a socially despised activity. However, the disparagement of commercial activities did not mean the absence of rational, accurate accounting. Non-commercial, non-governmental institutions were commonplace, and many of these were organizationally complex and concerned with maintaining, expanding, and bequeathing corporate assets.

To determine what accounting system was in general use in Korea or even what passed for rationality in connection with economic matters, it makes little sense to focus on fringe activities practiced by commercial organizations that operated

from socially inferior positions. Nonetheless, Western scholarship on Sinitic civilization (China, Korea, and Japan) has long been dominated by teleologies that assume social and historical change arises from commercial activities and is inherently progressive. Both Marxists and Weberians share this bias. While Marxists refer to the "sprouts of capitalism" in a feudal society [Ji, 2003. p. 73], Weberians seek out "cultural impediments to overseas innovations" [Aiken and Lu, 1998, p. 221].

The Western, economic-determinist approach to accounting has resulted in by-passing the larger body of accounting practices common to non-profit cooperative societies. The very strengths of the traditional Confucian societies have long been portrayed as impediments. For example, Auyeung [2002, p. 14] lists the Chinese obstructions to the rapid adoption of Western accounting techniques as "centralized political power, a society resistant to change, an anti-merchant mentality and narrow-based learning." "Rational" is a term reserved for Protestant societies [Auyeung and Ivory, 2003, p. 19]. The assumption is, all choices are equal; the mystery is, why did Confucian societies fail to make the rational choice and emulate Europe? The irony is, Japan and even Europe in the 19th century were in the throes of transforming feudal chaos into functioning structures that would offer stability and the power to mobilize resources and labor. Developments such as centralized governments, societies able to manage change and produce stability, standardized education, and sufficient state power to control and tax merchants had already taken place in China and Korea. By casting Sinitic tradition in a negative light for not having moved a socially despised fringe ethic to center stage, the West has been blinded to the actual rationality at work directed to solving immediate needs. Here we reference "moral economy" to introduce the dominant ethic as a rational response to circumstances and to strip away the negative images favored by Western academics for more than a century. In our concluding remarks, we will return to the main components of this moral economy to interpret the activities revealed in the MCA books and to explain why the profit motive was missing.

A WORKING DEFINITION OF DOUBLE-ENTRY ACCOUNTING

One task of this paper is to determine whether the books of the MCA were kept in a double-entry fashion or something closely approximating it. For this, we will need to have a work-

ing definition of double-entry accounting as a guide. The following notes do not presume to offer an exhaustive definition, but do identify a few principles from more well-known historical studies on the development of European accounting practices.

De Roover [1956, p. 114] specified certain minimum requirements for an accounting system to qualify as double entry:

> …there is no double-entry bookkeeping without the observance of certain strict rules. A necessary prerequisite is that all transactions be recorded twice, once on the debit and once on the credit side. If this requirement is not fulfilled, there is, by definition, no double entry. The principle also involves the existence of an integrated system of accounts, both real and nominal, so that the books will balance in the end, record changes in the owner's equity and permit the determination of profit or loss.

In addition to a ledger that records entries twice, there must be ledgers for real and nominal accounts, a demonstration of balance, and the possibility of determining profit or loss. In striking a balance, there should be no surplus or loss since this would indicate a simple deduction of liabilities from assets [de Roover, 1956, p. 128]. Other evidence is also desirable – day books and journals that post entries to a ledger, some tracing of accounts for expenses (or transaction costs), a capital account, and a balance sheet [de Roover, 1956, pp. 125, 132, 141].

To be called double-entry bookkeeping, Yamey prefers to see a consistent entry for each transaction in two different places, a capital account, and a profit-or-loss account [Littleton and Yamey, 1956, pp. 6-8; Yamey, 1975, p. 722]. More recently, Yamey seems willing to reduce his requirement to dual entry and now agrees with Lane, who wrote, "as a practical matter, in research, [the student] may regard any accounts with duality of entry as being an elementary form of double-entry" [Lane, 1977, p. 187; Yamey, 1992, p. 706]. Recording transactions in two different places allows balancing, and if the balances of various sub-accounts are fed into a general ledger, a capital account and a profit-or-loss account can be easily drawn up. The use of accounting periods and a single monetary unit might be added to these requirements [Nobes, 1994. p. 246].

We will demonstrate that the accounts for the MCA recorded every entry that crossed ledgers in two different places (although not every transaction within ledgers). There was in evidence an integrated system of accounts (although all accounts were real accounts), accounting for expenses (transaction and

wastage costs), defined accounting periods (the agricultural cycle), and balanced books. We will discuss personification (independent accounts trading back and forth and independently recording their trades) as the principle underlying and unifying the MCA accounts. The absence of nominal accounts and profit-or-loss statements will be explained by invoking the societal ethics of the moral economy, the context in which these accounts were produced. Before examining the accounts, we will briefly introduce the provenance of our sources.

VILLAGE AND CLAN ASSOCIATIONS

While commercial establishments were rare, mutual assistance associations (*kye*) were common in late Chosŏn Korea (1598-1910). Individual investors pooled resources and then appointed stewards (*yusa*) to carry out their aims. The associations usually had three objectives. The first was to act in the public interest, to provide funds for public works, education, and the relief of the poor. The second aim was insurance and mutual aid, providing for marriage costs (*honin-kye)*, funeral costs (*sang-kye)*, and sacrificial rites (*chesa-kye*). The third aim was investment financing, providing for tree planting (*song-kye*), irrigation (*po-kye*), and for the lease of oxen and ploughs (*nong'u-kye*) [Shikata, 1976, p. 71].[8] The MCA engaged in all these activities and more.

BOOKKEEPING PRACTICES OF THE MUN CLAN

The account books or *yonghagi* are among the most important archives of the MCA. Six account books covering the period from 1741 to 1927 relating to the main clan association and four account books from 1819 to 1881 concerning a branch clan association are available.[9] The form of Vol. 1 (1741-1765) differs from all the later volumes. It began as a simple record, but by the 1760s, it had assumed a complex form that became the pattern for all later volumes. Vols. 2-6 contain elaborate accounts that record receipts and expenses in a basic dual-entry form.

[8]For a description of an 18th century Chinese financial cooperative scheme, see Reiss et al. [1996].

[9]Main Clan: Vol. 1 (1741-1765); Vol. 2 (1779-1805); Vol. 3 (1806-1816); Vol. 4 (1843-1849); Vol. 5 (1850-1871); Vol. 6 (1884-1928); Collateral Clan: Vol. 1 (1819-1826); Vol. 2 (1827-1841); Vol. 3 (1845-1863); and Vol. 4 (1864-1881). All of these are photolithographically reproduced in Han'guk Chŏngsin Munhwa Yŏn'guwŏn (ed.), 1995.

The increasing sophistication of recording after Vol. 1 was likely caused by the growth in the financial scale of the MCA.

Rural Korea in the 18th century was not highly monetized; thus, money was a complex matter. The first use of copper coins (from 1706) appears in a village association record of major local events (1667-1984) [Han'guk Chŏngsin Munhwa Yŏn'guwŏn (ed.), 1955, pp. 217-227]. This record appeared 28 years after the central government had begun in earnest to mint metallic coins (1678). These coins were known as *sangp'yŏng t'ongbo* ("ever-normal circulating treasure"). Mention of these coins indicates that metallic currency was quickly adopted in the countryside of southwest Korea in a context where pre-industrial agrarian change was slow. From studies of northern China, Huang [1985, p. 47] suggests that it took at least three generations before "secular" change (e.g., commercialization and handicrafts development) was apparent, but in southwest Korea, it seems to have taken about a generation for coinage to facilitate exchange practices.

Despite the spread of coinage, accounts were never expressed in a single currency. In fact, receipts and expenses were denominated in three currencies – unhulled rice, minted copper-bronze coins, and milled rice. The rice payments can be considered payments in kind, but they were so universal and standardized that they actually served as money. Unhulled and milled rice functioned as "rice money," consumable and storable specie with a natural loss value. Copper cash was more stable. Introduced widely from 1678, its value generally remained steady until 1866, at which time the government issued a multi-denominational coin with a face value one hundred times the old coin. Chinese money was also imported to Korea at the end of the 19th century when, as per Gresham's law, the older, higher-value coins were withdrawn from circulation. Inflation and chaos resulted and lasted into the 1890s when foreign currencies (Mexican and Japanese) began to circulate with new Korean government issues. Financial and economic stability did not begin to re-appear until 1904 when Japanese policies imposed order [Pak, 1969, pp. 30-91, 116-145; Palais, 1996, pp. 855-876, 924-1001]. Strangely, the MCA accounts during the late 19th and early 20th centuries do not show the introduction of the Japanese *yen* until early 1928 (at the very end of Vol. 6). Until then, the accounts continue to use the old character for copper cash or *yang*. The consistency in the unit of currency probably indicates a desire to maintain accounting consistency. Since Japanese currency was imposed shortly after the annexation of

Korea in 1910, it evidently took about a generation to adopt the new coinage.

The following subsections discuss five separate bookkeeping concepts and methods related to the clan accounts. These topics will be illustrated with exhibits and tables drawn from the source materials.

Developments in the Mechanics of Bookkeeping: Writing in premodern Korea was in the East Asian vertical style, top to bottom and right to left. Not surprisingly, the account books of the MCA were written in this fashion. Account books in double-entry format must have a method to distinguish verbally and visually between debits and credits. Littleton [1956, pp. 232-233] discusses the development of journal nomenclature and form in Europe. European accountants developed technical vocabulary and eventually a visual vocabulary of indentation at least by the middle of the 19th century.[10] By the 18th century, the accountants for the MCA were deploying indentation, special terms, and word order as their technical apparatus.

At first, two different types of written characters, ordinary and large, were employed to facilitate classification, together with an indentation technique. The large character had two usages, marking years and accounts. In the 1741 accounts, large characters marked the year, rental income, and "remaining" cash or rice on hand (see Exhibit 1). By 1744, the use of large characters had disappeared, and the reporting period had changed from an annual report in the twelfth month to biannual reports in spring and autumn.

The most important distinction was between debits and credits, which came to be indicated by special terms, *yu* (留) and then *nae* (內). In the 1741 account (Exhibit 1, indicated by C), we can see *yu,* which means "remaining [assets]." In Exhibit 1, upper and lower sheets, *yu* indicates old grain kept in storage. In the following year, *yu* was disappearing and *nae* was beginning to appear. Within the decade, *nae* became the standard term with the clear meaning of "total income or assets from

[10]Littleton [1956, p. 233] describes the process as follows: "Practice has passed from one definite stage to another: 1. a time of no journal entries, when the full statement of the transaction was probably entered directly in the two ledger accounts concerned; 2. a period (say 1430 to 1550) with a highly technical form of journal entry preparatory to the record in the ledger; 3. a long interval in which the journal entry expressed more or less fully a complete thought; and 4. the modern period – now quite technical in form again – when the focus is the accurate sorting of accounting units."

which expenditures" would be deducted. Exhibit 2 shows that *nae* appears in the 1793 accounts at the end of the second column from the far right in the top of the illustration and again at the end of the third column from the far left (indicated with G). Debits were recorded to the right of *nae* and credits to the left. This use of the term *nae* to divide expenditures from assets was not unusual in East Asia. It was used extensively in Japanese (Tsushima) trade ledgers from the Tokugawa period. Hyŏn's work [1916, p. 25], explaining the methods of the Kaesŏng merchants, depicts *nae* playing the same role.

From as early as the 1740s, the MCA accounts used word order (whether words or numbers came first) to indicate the difference between debits and credits. In Exhibit 2, words begin all debit entries and numbers begin all credit entries. This word order was consistently applied from the mid-1750s. Words followed by numbers indicated a positive entry (income) and numbers followed by words signalled a negative entry (payment). For spring accounts, the debit entries all begin with "balance brought forward (from the previous year)" (*chŏnsu* or *chŏn* as illustrated in Exhibit 2, indicated by F, first appearance 1745), but autumn debit entries often begin with "remaining" (*yu*), as in "remaining from the previous accounting period."

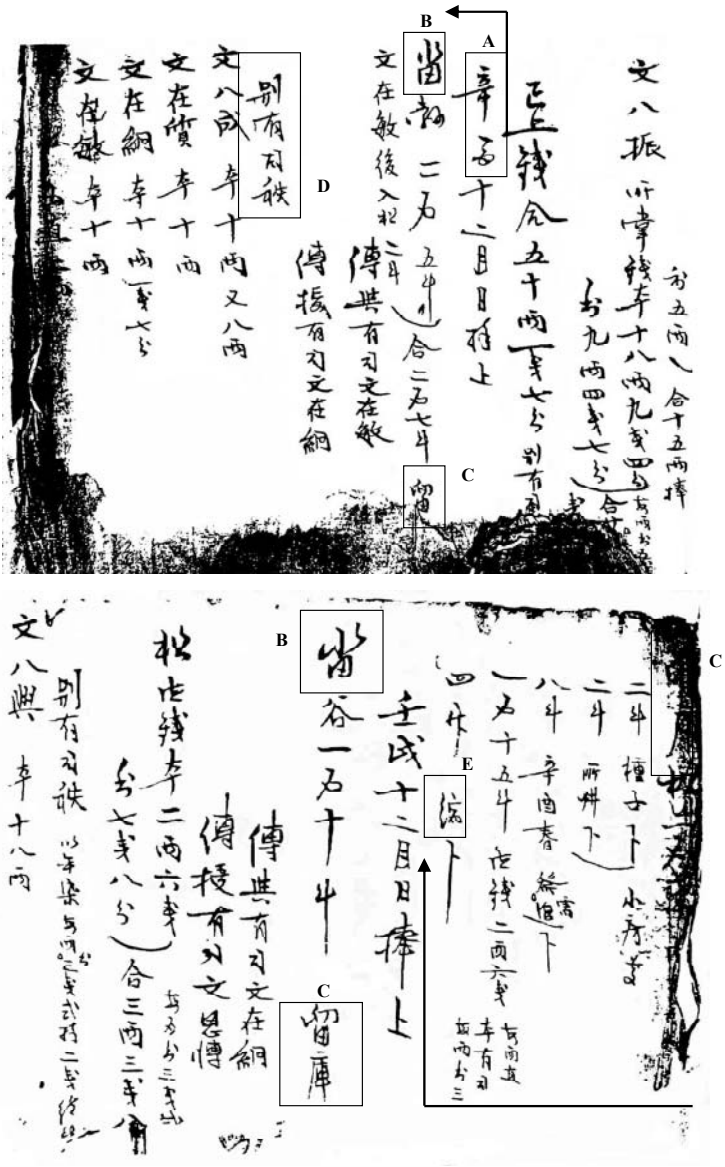
Also, from the mid-1750s, entries for expenditures carried a final character, *ha*. For example, in Exhibit 2 (indicated by H), after the columns that end in *nae*, all expenditure entries end in *ha*, except final entries that express "natural loss" (*ch`uk*, indicated by E). From 1755, subtotals were marked off at the end of sections by the term *isang* (Exhibit 2, indicated by J), but the use is inconsistent until the records resume from 1779, following a gap of 14 years.[11]

Although the terms *nae* and *ha* appear early to distinguish debits from credits, we do not find extensive indentation until much later. The technique of indentation was developed by the 19th century in English accounting and indicated a separation between debits and credits [Littleton, 1956, p. 232]. Littleton points out that the custom was to indent credits below debits. In Exhibit 1, we can see some experimentation with indentation,

[11]Other technical terms that do not appear here should be born in mind. For example, *pong* or *sang* meant receipt, *kŭp* or *ha* (the *ha* that is mentioned above) meant expenditure, *ip* or *nae*[2] meant incoming. This *nae*[2] is a different character from the *nae* discussed above and is in the glossary as *nae*[2]. Finally, *ch'ul* or *kŏ* meant outgoing. These terms are explained in Hyŏn's primer [1916, pp. 18-26]. They all seem to have had native Korean pronunciations (*idu*), but we have given them their common Sinitic pronunciation.

EXHIBIT 1

Mun Clan Ledger (*Yonghagi,* two folio sheets), 1741

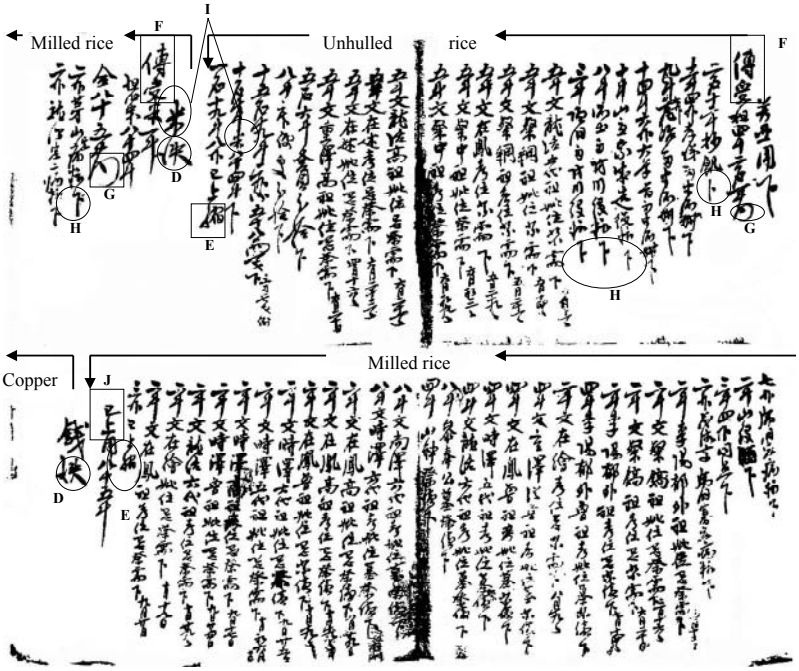


Source: Han'guk Chŏngsin Munhwa Yŏn'guwŏn (eds.) (1995), *Komunsŏ chipsŏng vol. 21* (Collection of documents, vol. 21) (Sŏngnam: Han'guk chŏngsin munhwa yŏn'guwŏn), pp. 576-577.

NB: A: year (1741); B: income (畓); C: remaining (留); D: ledger ([別有司]秩); E: natural loss (縮).

EXHIBIT 2

Mun Head Clan Ledger (*Yonghagi*, two folio sheets) Unhulled rice (春租秩), Milled Rice (米秩), and the Beginning of Copper Cash (錢秩), Spring 1793



Source: Han'guk Chŏngsin Munhwa Yŏn'guwŏn (eds.) (1995), *Komunsŏ chipsŏng vol. 21* (Collection of documents, vol. 21) (Sŏngnam: Han'guk chŏngsin munhwa yŏn'guwŏn), p. 638.

NB: D: ledger (秩); E: natural loss (縮); F: balance brought forward (傳受); G: from this (total income) (內); H: expenditure (下); I: milled rice (米); J: subtotal (已上).

but consistency does not appear until 1785. Exhibit 2 for the 1793 accounts shows an indentation style that remained consistent for the next century or more with debit-entry columns beginning higher on the page than credit-entry columns. In short, by the 1780s, the above techniques produced pages that textually and visually showed the relationships between entries.

Personal Accounts and a Division of Administration: Yamey offers four possibilities for the origins of double-entry bookkeeping (DEB). Perhaps it was the work of a single gifted inventor or a triumph of the mercantile ingenuity of the Renaissance. A third possibility is that DEB was an accidental technical de-

velopment from simpler forms that evolved through a process of accretion and adaptation. The fourth possibility is that DEB was a response to "new or growing business needs not satisfied by earlier methods of record-keeping" [Littleton and Yamey, 1956, p. 2]. The differences between the 1741 and the 1793 accounts kept by the head clan (*taejong-kye*) of the Mun Clan indicate that, in this case, techniques grew by a gradual process of accretion and adaptation that employed customary techniques already in use. In the earliest records from 1741, items were already being grouped under appropriate headings, indicating a gestation of accounting methods. By the 1760s, accounts had been separated into their own ledgers.

The books kept between 1819 and 1883 by a branch Mun Clan (*sojong-kye*) show no evolution and display the same sophisticated form perfected by 1793 in the head clan accounts. However, the branch clan accounts display different emphases from those of the head clan. The head and branch clan books show a division of administration. In particular, the branch clan's books contain personal accounts. Personal accounts occasionally appear in the head clan accounts in connection with memorial rites (filial piety), bad debts, and emergencies, but they exist routinely throughout the branch clan records for funerals and expenditures for seed and tillage. The fact that individual or household names were attached to transactions as well as insurance payments is a significant refinement over the head clan accounts. Table 1 contains an extract from the branch clan accounts and presents the unhulled rice ledger for 1819. Lines 10-19, 22-24, and 33 and 36 are all personal accounts with names indicated in bold.

TABLE 1

Original Text and Translation for Unhulled Rice *ch'unjo* (春租) Spring Period (Branch Clan), 1819

Line	Original text		Translation		conversion to *tu*
1	己卯春		1819 spring		
2	傳受租七十三石十八斗八升三合		**carried down** [from previous fiscal year]		1478.83
3	一石十五斗松溪祭債下		Song-kye [another association] rite cost		35
4	一石十斗場巖祭債下		Chang`am [village association] rite cost		30
5	二石私乃	庫直	Remuneration	Warehouse keeper	40
6	五斗庫基所耕		Annual production cost [a)]		5
7	五斗例給種子		Seed according to precedent		5

8	十一斗捧上廳盖草		Thatch Posang house		11
9	七斗庫舍盖草		Thatch warehouse		7
10	五斗例給種子 再哲		Seed according to precedent **Chae Ch'ŏl**		5
11	一石私乃	大元	Remuneration	**Tae Wŏn**	20
12	五斗例給種子		seed according to precedent		5
13	十四斗四升光大畓七斗落半所耕 次先		Kwangdae paddy 7 *turak* half annual production cost **Ch'a Sŏn**		14
14	六斗大草畓二斗落半耕 冷泉宅		Taech'o paddy 2 *turak* half annual production cost **Naeng Ch'ŏn House**		6
15	六斗二升甬洞畓三斗落半所 萬貴		Yongdong paddy 3 *turak* half annual production cost **Mangwi**		6.2
16	四斗堂洞畓三斗落半所耕 興得		Tangdong paddy 3 *turak* half annual production cost **Hŭng Dŏk**		4
17	四斗甬洞畓三斗落半所耕 肖伊		Yongdong paddy 3 *turak* half annual production cost **So Yi**		4
18	四斗東亭畓四斗落種子 小八仙		Tongjung paddy 4 *turak* seed **So P'al Sŏn**		4
19	五斗所土畓四斗落種子推移秋捧次 望湖宅		Sot'o paddy 4 *turak* seed loan to be repaid within autumn harvest time **Mangho House**		5
20	二斗同防川役粮		Food costs for labour when building a dam for flood prevention		2
21	十斗山直所耕		Grave keeper's annual production cost		10
22	五斗光大畓半所耕 億伊		Kwangdae paddy half annual production cost **Ōk Yi**		5
23	十三斗八合石朴畓四斗落半所 國山宅		Sŏkbak paddy 4 *turak* half annual production cost **Kuk San House**		13.08
24	五斗孝悌畓堰水役粮 花方宅		Food costs for labour when irrigating Hyoje paddy **Hwa Pang House**		5
25	一石十斗庫使推移秋捧次		Loan to warehouse manager to be repaid within autumn harvest time		10
26	二石作錢三兩		Traded 2 *sŏk* for [cash] 3 *yang*		40
27	七石作米五十二斗五升白七斗五升例		Milled 7 *sŏk* [unhulled rice into] 52 *tu* 5 *sŭng* hulled rice at a rate [of 1 *sŏk* unhulled rice yields hulled] white rice 7 *tu* 5 *sŭng*		140
28	一石書徒求請		Students' request		20
29	七斗一升三合作錢五錢荒		Traded 7 *tu* 1 *sŭng* 3 *hop* for cash 5 *chŏn* [grain in a year of dearth]		7.13
30	五石作米四十斗八斗例		Milled 5 *sŏk* 40 *tu* [unhulled rice] into 40 *tu* at a rate [of 1 *sŏk* unhulled rice yields hulled rice] 8 *tu*		100
31	一斗省墓粮下		Foodstuffs to visit ancestral graves		1
32	十石十一斗八升錢十六兩九錢四分一兩六錢例		Traded 10 *sŏk* 11 *tu* 8 *sung* for cash 16 *yang* 9 *chŏn* 4 *pun* at a rate [of 1 *sŏk* =] 1 *yang* 6 *chŏn*		211.8

33	十斗文必勳氏嚴親初喪賻	Donation for **Mun P'ilhun's** parents' funeral expenses	10
34	十斗永保亭求請	Request for Yongbo pavilion	10
35	三石門契別廳求請	Request for clan association's auxiliary building	60
36	十斗文壽澤氏慈夫人初喪賻下	Donation for **Mun Sut'aek's** compassionate wife's funeral expenses	10
37	十三斗二升五合作米三斗三升	Milled 13 *tu* 2 *sŭng* 5 *hop* [unhulled rice into hulled rice] 3 *tu* 3 *sŭng*	13.25
38	三石作米二十斗一升六斗七升例	Milled 3 *sŏk* [unhulled rice into] 20 *tu* 1 *sŭng* hulled rice at rate [of 1 *sŏk* unhulled rice yields hulled rice] 6 *tu* 7 *sŭng*	60
39	二十一石別廳除	Deducted for auxiliary building	420
40	荒 三石作米二十一斗 七斗例	Milled [grain in a year of dearth] 3 *sŏk* [unhulled rice into] 21 *tu* hulled rice at rate [of 1 *sŏk* unhulled rice yields hulled rice] 7 *tu*	60
41	一石六斗九升七合縮	1 *sŏk* 6 *tu* 9 *sŭng* 7 *hop* **natural loss**	26.97
42	已上用七十三石一斗八升三合	Above expenditures total 73 *sŏk* 1 *tu* 8 *sŭng* 3 *hop*	1461.83
43	十七斗留	17 *tu* **remainder**	17

Source: Han'guk Chŏngsin Munhwa Yŏn'guwŏn (eds.) (1995), *Komunsŏ chipsŏng vol. 22* (Collection of documents, vol. 22) Sŏngnam: Han'guk chŏngsin munhwa yŏn'guwŏn), pp. 5-6.

[a)] *Sogyŏng* is translated here as "annual production cost." The meaning of the term *sogyŏng* is not yet clear. Pak [1999, pp. 54, 313-314] argues that this term refers to taxation, although the usual tax indicators referred to land area (*kyŏl*, *turak*, etc). The Association was not liable for taxation; the tenant was, so we would not expect to see notations for taxation in the Association's accounts. Based on its appearance continually throughout the accounts for the Mun clan as a credit, the term seems to refer to expenditures for labor (oxen and plowing to prepare the land and lay seed), but may have included a tax subsidy. In the 1741 accounts and in lines 6 and 7 above, we can see *sogyŏng* and seed costs as separate items, listed side-by-side, so *sogyŏng* was not a seeding cost. This sort of item was quite common in initial payments from the unhulled rice ledger. In lines 13-17 and 22-23, we see *pan sogyŏng*, meaning a payment of half of the usual cost of *sogyŏng*. Presumably, the tenant was responsible for the remaining half.

These personal accounts link communal and private concerns. The associations kept such elaborate records because they dealt with joint common property, but the personal accounts demonstrate that individual liability was the norm. Individual names indicate that the village community was not a faceless collective, a commune; rather, its economic stability relied on individual investors and individual responsibility. Goody [1996, p. 7] links individualism and the necessity for accurate accounting.

Individual household responsibility was at the base of production, a fact that becomes apparent when comparing the structure of payments by the head clan (Table 2) with those of the branch clan (Table 3).

Head clan expenditures focus on obtaining copper coins (to purchase specialized items), milling unhulled rice, paying out dividends, and extending funds for ancestral rites, all expenditures that impacted the entire community. Their prominence indicates that the head clan's overarching concern was for the greater community. Branch clan expenditures were more evenly spread over a variety of local, immediate concerns. There were significant productive payments (seeding and tillage costs within personal accounts), but the largest group of expenditures was for unproductive activities, such as students, education, charity, and public buildings.

The differences between the structure of the head clan expenditures and those for the branch clan indicate that the branch clan formed the basic unit of production and supplied most social welfare. The head clan's function was to manage the external relations that affected all members of the MCA. There was clearly a tiered aspect to the management of the village economy highlighted by the fact that personal accounts were mostly to be found in the branch clan's records. The size of the unproductive payments also indicates that surpluses existed which allowed the majority of village members to escape subsistence crises during the 18th and early 19th centuries.

Transaction Costs and Natural Loss: The accounts of the MCA do not contain explicit transaction costs. What we see is the term *ch`uk* (Exhibits 1 and 2, indicated by E), translated as "natural loss." We hypothecate that this term indicated the natural loss of grains to vermin and rot (wastage), as well as the transaction costs involved in milling unhulled rice into white rice. *Ch`uk* was always present in unhulled rice accounts and often present in milled rice accounts, but was not seen in other accounts. Moreover, *ch`uk* entries were not cross-listed and appeared only as a reduction in stocks. While no cross-listing might support an argument against the designation "double entry," the presence of these careful entries indicates great concern for the comprehensive and consistent calculation of balance. For example, Exhibit 1 (E: natural loss) records 4 *sŭng* as a "natural loss." The difference between income and outgo was 4 *sŭng*, but there is no explanation for the deficit, except the term *ch`uk*, which basically means "shrink" or "shortfall." Because no rice was milled, we

TABLE 2

The Structure of Head Clan Expenditures of Unhulled Rice (Spring 1793)

Balance brought down from 1792	Personal accounts (seeding, tillage)	Land accounts (seeding, tillage)	Dividends to member-ship	Milled	Traded for copper coins	Ancestral rites and grave upkeep	Carry over autumn	Students, education, charity, public bldgs.	Natural loss	Labour for irrigation repairs
841 *tu*	0 *tu*	35 *tu*	106 *tu*	210 *tu*	319.2 *tu*	68 *tu*	0 *tu*	52 *tu*	39.8 *tu*	11 *tu*
99.9 per cent	0 per cent	4 per cent	12.6 per cent	25 per cent	38 per cent	8.1 per cent	0 per cent	6.2 per cent	4.7 per cent	1.3 per cent

Source: Han'guk Chŏngsin Munhwa Yŏn'guwŏn (eds.) (1995), *Komunsŏ chipsŏng Vol. 21* (Collection of documents, Vol. 21) (Sŏngnam: Han'guk chŏngsin munhwa yŏn'guwŏn), p. 638.

TABLE 3

The Structure of Branch Clan Expenditures of Unhulled Rice (Spring 1819)

Balance brought down from 1818	Personal accounts (seeding, tillage)	Land accounts (seeding, tillage)	Dividends to member-ship	Milled	Traded for copper coins	Ancestral rites and grave upkeep	Carry over autumn	Students, education, charity, public bldgs.	Natural loss	Labour for irrigation repairs
1478.83 *tu*	176.68 *tu*	0 *tu*	0 *tu*	373.25 *tu*	258.93 *tu*	96.00 *tu*	17.00 *tu*	530 *tu*	26.97 *tu*	0 *tu*
100 per cent	11.95 per cent	0 per cent	0 per cent	25.24 per cent	17.51 per cent	6.49 per cent	1.15 per cent	35.84 per cent	1.82 per cent	0 per cent

Source: Han'guk Chŏngsin Munhwa Yŏn'guwŏn (eds.) (1995), *Komunsŏ chipsŏng Vol. 22* (Collection of documents, Vol. 22) (Sŏngnam: Han'guk chŏngsin munhwa yŏn'guwŏn), pp. 5-11.

believe that this "shortfall" was a natural loss due to water and rats. From 1765, *ch`uk* became a regular feature in the accounts.

In the unhulled rice ledger for spring 1793 (Exhibit 2), both "natural loss" (E) and the milling cost of unhulled rice appear (I). Most likely, this natural loss consisted of both real loss and transaction costs. Transactions with rice and the cost of milling almost always went in tandem. Traditionally in rural village markets, there was a *toejaeng-i*, who measured and milled grain for a commission [Kim, 1977, pp. 299-300]. In the milled rice accounts, there is another natural loss, probably due to rats and water. This loss would not have reflected any further transaction costs after milling, so these costs are most likely due to wastage. With our small sample, we can only catch a glimpse of what might have been the relative size of natural losses and transaction costs. Table 4 presents examples extracted from the accounts for 1741 and 1793-1795.

Natural loss from vermin and rot probably ranged from 0.4 to 0.9%, while transaction costs may be estimated at 3.7 to 4.5%. The high cost for spring 1795 (4.9%) may be attributed to the poor crop of the previous autumn.

An awareness of transaction costs indicates an appreciation for total cost accuracy. Even more minute transaction costs appear as the cost of the paper to record a land sale in the copper cash ledger for 1793 (not shown). Implicit transaction costs appear elsewhere in the form of travel expenses to conduct transactions in distant places or to visit government offices.

TABLE 4

Natural Loss and Transaction Ratios

Ledger	ch`uk (縮) ratio	Natural loss / Transaction
1741	0.9 per cent	Natural loss
1793 spring Unhulled	4.7 per cent	Natural loss + Transaction (pure Transaction: 4.3 per cent?)
1793 spring Milled	0.4 per cent	Natural loss
1794 spring Unhulled	4.1 per cent	Natural loss + Transaction (pure Transaction: 3.7 per cent?)
1795 spring Unhulled	3.2 per cent	Natural loss + Transaction (pure Transaction: 2.8 per cent?)
	4.9 per cent[a)]	Natural loss + Transaction (pure Transaction: 4.5 per cent?)
1795 spring Milled	0.4 per cent	Natural loss

[a)] Includes 9 *tu* as "lost".
Source: same as Tables 1 and 2.

Transaction costs in Chosŏn Korea were widely recognized. Because rice was an important commodity, even functioning as money, the Chosŏn state had to be able to detect deviations from rules and customs in order to regulate compliance. Many transaction costs involved in creating and maintaining institutions to regulate rice transactions defy our explanation, but it should be noted that the central government was greatly concerned with eliminating non-standard and excessive exactions on the peasantry. To control this abuse, King Sukjong in 1715 established a standard shape that was not the ordinary simple box but a trapezoid. An ordinary, wide-mouth box allowed the abuse of "heaping measures," whereas a trapezoid, with its narrow mouth, wider bottom, and taller body, helped ensure every measure's exactness and limited "heaping measures" that could be raked off to the official's private benefit.[12]

Personification or a Simple Division of Accounts?:

> The attribution of a living, independent personality to accounts must have had its roots in the very earliest forms of bookkeeping [Jackson, 1956, p. 295].

According to Jackson, the teaching of accounting in England from the 17th to the late 19th century developed from the rote application of procedural rules to a rational application of judgment based on the concept of personified accounts. Double-entry accounting necessitates the separate establishment of independent accounts (e.g., capital, goods, bills receivable, bills payable, cash, etc.) that swap entries back and forth depending on how one wishes to classify the entry. When a transaction occurs between accounts, it is recorded in both account books as either received (to be in debt to another account or debit) or paid out (to be owed by another account or to be in credit). In other words, by personifying each set of accounts in their separate ledgers, complex accounts could be easily handled and errors detected by comparing the entries and totals in the various ledgers. When all amounts and ledgers are reconciled, the books are balanced. If not, then the accountant or auditor has to search for the error. After surveying pedagogical texts from the early 17th to the late 19th century, Jackson [1956, p. 296] points out that "the practice of explaining the entries to be made in the ledger by means of personifying the accounts is found in

[12] King Sukjong issued an order in 1715 to the Board of Taxation that trapezoid measures should be distributed nationally. See Kuksa P'yŏnch'an Wiwŏnhoe (ed.), 1955-1963, *Sukjong sillok pogwŏl chŏngo* 56:1a [1715/02/08 (ŭlhae)].

the very earliest British texts and must be closely linked with the very origin of the system of bookkeeping."

The MCA account books (*yonghagi*) may have been an early example of personification. The first volume of the *yonghagi* runs from 1741 to 1765, and by the spring of 1765, the previous autumn's unhulled rice remainder was carried down to begin a new integrated account structure with separate ledgers marked off by the term *chil* (Exhibit 2, indicated by D). Up to the 1760s, however, the use of *chil* to mark categories was irregular. For example, the ledger for 1741 combined unhulled rice and copper cash accounts, but the copper cash accounts were grouped under a heading (*pyŏl yusa chil*) that meant "[items] specially managed by the bursar" (Exhibit 1, indicated by D). *Pyŏl* means special; y*usa* means the bursar for the clan association, a title that is still used today; and *chil* means order, system, or regularity if read as a Chinese character. When read in a Korean linguistic context, *chil* was a suffix that indicated something had taken on human characteristics and would act out a certain role. *Chil* became the standard suffix that marked out an entire and independent ledger, which had to be reconciled with all other ledgers to achieve a balance. In 1741, the separation had not yet occurred. As time passed, specific commodities, particularly milled rice, yeast cakes, and barley, as well as copper cash, were given their own ledgers with debit and credit transactions as if they were living persons.[13] Since these items came to be seen as agents themselves, references to the bursar (*yusa*) disappeared, leaving only the suffix *chil*. The ledgers, indicated by *chil*, became stewards, acting on behalf of the owner, and traded assets among themselves and outsiders.

In the spring accounts for 1756, we see the first appearance of the technical term *chil* to mark off the part of the accounts devoted to copper cash (*chŏn-chil*). In 1762, *chil* is first used to mark off the accounts devoted to milled rice (*mi-chil*), and it is from this time that a stable personification system that continued until the late 19th or early 20th centuries was in evidence. By the 1793 ledgers, such transactions were extracted from day books and journals and put into their own ledgers, with *chil* attached as a suffix to identify milled rice, copper cash, barley, and yeast cakes.

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[13]*Chil* and its use to personify accounts was also described in this way by Hyŏn [1916, pp. 6, 20] when he reported on the methods reputedly handed down from the 13th century and still in use by Kaesŏng merchants in the early 20th century.

The special role of the unhulled rice ledger requires clarification because in Exhibit 2 from the MCA records for 1793 this ledger does not bear the suffix *chil*, while in other contemporary books it does. Ordinarily the unhulled rice ledger was like any other ledger, but it had a particular status because it contained the main income producing accounts. Unhulled rice was the money that grew from the ground and bought copper cash, yeast cakes, and even barley. Unhulled rice likewise bought or was processed into milled rice to obtain yet a different commodity, an edible commodity, so it is not surprising that the MCA accorded it a special ledger.

In the 1793 example, we can see the full development of independent, personified accounts.[14] By 1793, *chil* had been elevated to act as the title suffix for all ledgers, except unhulled rice. The sequence of ledgers was standardized by the 1760s. In the spring, the ledger sequence was unhulled rice (*cho*), milled rice (*mi-chil*), and copper cash (*chŏn-chil*). In the autumn, the order was unhulled rice, milled rice, copper cash, barley (*mongmaek-chil*), and yeast cakes (*kokja-chil*).

The autumn accounts were closed for the year as indicated by the signatures of the bursar and the auditor attesting to the accuracy of the ledger. The auditor was always someone from outside the MCA, indeed from outside the village, invited to provide objectivity. Independent auditing insured accuracy and transparency; trust was the result.

The foregoing discussion begs the question of whether the ledgers reflected personification or simply a division of accounts. What survives today are separate, independent ledgers, not day books or journals. Transaction entries usually were undated but were not randomly entered. Similar entries were grouped together, indicating that there must have been day books or journals. More importantly, the extant ledgers form a framework of bilateral transactions. Although transactions across ledgers were subject to exchange rates or transaction costs, transactions did occur. These transactions were always recorded twice, once in the issuing ledger (negative) and once in the receiving ledger (positive). Because the various ledgers traded among themselves, it may be concluded that they acted as personified agents and transcended a mere division of accounts.

Nominal Accounts: The MCA ledgers do not include a profit-

[14]The accounts for 1793 are used because the document is free of damage and clear.

or-loss ledger (*iik-chil*). We can conjecture that the MCA knew of such a practice but seemed to have had no need to calculate profit. Hyŏn's 1916 primer, based on the traditional practices explained to him by two Kaesŏng merchants, lists four ledgers necessary to reach a final balance and to determine profit or loss – liabilities (*kŭpch'a-chil*), assets (*pongch'a-chil*), profit (*iik-chil*), and loss (*sobi-chil*). The 1916 text clearly outlines a double-entry style with the final calculation of profit or loss in a nominal ledger. The MCA ledgers also contained expenditures, receipts, and losses (transaction costs and natural loss), but no profit ledger. The reasons were probably multiple, but fundamentally derived from the difference between mercantile and agricultural needs. The clan association, insensitive to profit, was sensitive to loss. The MCA was interested in expanding its land holdings, repairing its buildings, entertaining its guests, and providing for its membership. Copper cash was but one of three commodities that could obtain or satisfy these needs. Like modern, non-profit, cooperative societies, the only concerns of the association were to meet the needs of the membership and to prevent losses. The MCA had no need of a purely nominal, profit ledger; all the MCA ledgers were real accounts with no separate nominal accounts.

The Bookkeeping System: Linked Single-Entry in a Double-Entry Framework: Until now, aspects of the bookkeeping in the clan accounts exhibited certain characteristics that approximated double-entry accounting – certain mechanical innovations (vocabulary and appearance) that separated debit and credit entries, the presence of personal accounts, the recognition of transaction costs and natural loss, and the personification of accounts. Ultimately, however, all of these features are merely aspects of form. It is now necessary to explain the accounting periods used and the overall integration of the accounts.

From 1741 to 1744, the MCA's accounting period was one full year. From 1744, the accounts broke the year (lunar twelfth month to lunar twelfth month) in half. The first half ("spring") opened the fiscal year and extended to the harvest, roughly between the sixth to eighth months. The second half ("autumn") stretched from the harvest to the closing of the fiscal year in the spring, thus creating two accounting periods. The development of two accounts periods in a single year necessitated the innovation of a special term to indicate "balance brought forward." Our example (Exhibit 2) of accounts for the spring of the year 1793 starts with the term *chŏnsu* (Exhibit 2, indicated by F), which

literally means the "unhulled rice balance brought forward from the last account to open the new account." This term designated the starting balance and brought forward the closing entry obtained from the previous ledger cycle.

The ledgers possessed elaborate technical aspects as all cross-ledger transactions were recorded twice. All ledgers were records of real accounts, with expenditures from them simply deducted from their own capitalization values. Thus, the accounts were not double entry; in fact, they have every appearance of an elaborate set of single-entry accounts linked together to allow cross-referencing and balancing. However, an elaborate single-entry system can closely resemble a double-entry system. Aiken and Lu [1998, p. 230] describe the Chinese Three Feet bookkeeping system as "intermediate" between single and double entry. They point out that this method used double entry for non-silver transactions in which commodities were first converted to silver that was subsequently spent. The silver was recorded twice, once as a receipt from a commodity conversion and once as a disbursement for an expenditure. The MCA accounts are filled with similar examples.

Although the MCA accounts may have been somewhere between single entry and double entry, there was a keen concern with accuracy. One great advantage of double entry is the identification of error. The fact that corrections of errors can be found in the MCA books demonstrates that they were meticulously recorded. Since errors in pre-modern and modern account books in Western Europe are common,[15] their presence here is not unusual, but, compared to other contemporary books, surprisingly few errors have been found in the MCA ledgers. The errors that did appear were often related to outstanding rent or grains borrowed; only occasionally were mistakes made in recording. When a mistake was discovered, notes were added around the entry in the ledger to indicate that it was an error and to explain the ramifications of the error on other ledgers. Such entries demonstrate that the ledgers were not just a list of payments, but rather the pinnacle of an elaborate set of integrated day books and journals. In short, what the records represent is an equity account ledger. Table 5 shows that the incidence of error between 1781 and 1808 for the conversion of rice to copper cash was 2.7%. Between 1846 and 1882, the nearby Haenam

[15] "…medieval [European] balance sheets do not always balance, because the bookkeeper was either unsuccessful or neglectful in tracing and correcting small differences" [de Roover, 1956, pp. 114-115].

Yun Clan books produced an error rate of 12%, indicating that the Mun Clan was more meticulous in its bookkeeping [Han'guk Chŏngsin Munhwa Yŏn'guwŏn, no publication date].

TABLE 5

Error in the Mun Head Clan Account Books for the Period 1781-1808

line	year	season	*tu* (a)/ decimal *sŏk*	total *yang* (b)	correctly calculated for 1 *sŏk* (c = total *yang*/ decimal *sŏk*	actual record (per *sŏk* or per 20 *tu*)	error (e = c - d)
1	1781	spring	820.00/ 41 *sŏk*	67.65	1.65	1.65	0.00
2	1781	autumn	63.20/ 3.16 *sŏk*	6.00	1.90	1.90	0.00
-	-	-	-	-	-	-	-
8	1783	spring	66.00/ 3.3 *sŏk*	10.70	3.24	a)	
-	-	-	-	-	-	-	-
22	1786	autumn	26.00/ 1.3 *sŏk*	4.60	3.54	b)	
-	-	-	-	-	-	-	-
50	1793	spring	319.20/ 15.96 *sŏk*	58.10	3.64	3.70	***0.06***
57	1796	spring	96.00/ 4.8 *sŏk*	11.52	2.40	b)	
58	1796	spring	85.00/ 4.25 *sŏk*	11.70	2.75	2.70	***0.05***
-	-	-	-	-	-	-	-
98	1808	spring	345.00/ 17.25 *sŏk*	29.32	1.70	1.70	0.00
99	1808	spring	180.00/ 9 *sŏk*	15.30	1.70	1.70	0.00
100	1808	spring	320.00/ 16 *sŏk*	28.80	1.80	1.80	0.00
101	1808	autumn	300.00/ 15 *sŏk*	25.50	1.70	1.70	0.00
Error rate = 2.7 per cent (2/73) [1781-1808] the number of errors = 2, the number of total records of 'per market price' = 73							

a) "per market price" is hard to discern due to corruption of the document
b) no marking of per market price
Source: see text.

The MCA accounts were linked together. Since all transactions were not entered twice, the system was not perfect double entry, but because all cross-ledger transactions were recorded twice, the fundamental principle of dual entry for the purpose of cross-referencing was clearly in evidence. Dual entries allow the easy tracking of assets and ease the preparation of trial balances. The fact that errors were found, corrected, and

referred back to other books testifies to the complexity and accuracy of the system. We must keep in mind that these were the accounts of an agricultural cooperative, an organization that produced and traded in commodities. If the organization had more complicated assets or if the volume of transactions had been greater, then the accounts might well have developed into a full-blown, double-entry system with nominal accounts. Although we do not yet have mercantile books from before the 1850s, we can see a traditional, dual-entry, indigenous Korean accounting system at work in the books of clan associations from the mid-18th century.

CONCLUSION: THE MAXIMIZATION OF UTILITY IN A MORAL ECONOMY

Our discussion of the MCA accounts raises two points. First, the fact that the accounts were kept by a clan association acting as an agricultural cooperative demonstrates that there was no necessary relationship between sophisticated accounting techniques and commercialism. Efficient bookkeeping was undoubtedly conducive to commercial success, but it was also a useful practice within the Korean moral economy. It was a technology that was applied in both contexts precisely because it was rational and efficient.

Second, the primary purpose of the MCA was mutual support, not profit. This would explain the absence of an integrated profit-or-loss balance. The goal was guaranteed subsistence for all members of the association, and the management of an asset pool that would function to maintain a stable community. If everyone had sufficient food, if there was sufficient surplus for communal needs, and if the surplus could stretch to the expression of social ideals (in particular, the ideal of filial piety), then social stability was achievable. Significant expenditures were made for projects best understood as "for the common good."[16] Loans and expenditures that might be called a form of social welfare, even a redistribution of wealth, were extended in hopes

[16]For example, expenditures for spring sacrifices (Exhibit 1, lower sheet, column 4 from right), a house for the grave keeper and irrigation repairs (Exhibit 2, upper sheet, columns 7-9 from right), sacrifices to the mountain god (Exhibit 2, lower sheet, column 16 from right); Table 1, spring 1819: unhulled rice, lines 3, 4 and 9, 28, 31, 34, 35, 39, and the categories of "land accounts," "dividends," and "labor for irrigation repairs" in Tables 2 and 3.

of enhancing communal survival and reciprocity.[17] Confucian ideology in 18th century Korea rested on personal responsibility but decried personal profit and enshrined community. We find plentiful evidence in these ledgers of extensive economic commitment to this ideal.

In the MCA accounts, there were numerous expenditures for ceremonies that directly related to the dominant social ideology of filial piety as a key pillar of social stability.[18] The performance of filial duties satisfied three needs. First, there was the need for personal emotional expression towards forebears. Second, the education of the young in the principle would eventually instill the responsibility for providing social welfare for the elderly, even the dead. Filial piety was the inter-generational social contract. Third, a filial son would attract community approval as a trustworthy and upstanding member of society. Offer [1997, pp. 450-452] reminds us that Adam Smith stated the purpose of economic activity: "…to be observed, to be attended to, to be taken notice of with sympathy, complacency, and approbation." The pursuit of wealth beyond survival was the "pursuit of *regard*." "The intrinsic benefits of social and personal interaction" or "the satisfactions of *regard*" are a human propensity perhaps stronger than the propensity to "truck, barter, and exchange." Material welfare, then, was not the sum total of human desire.

The 18th century Korean moral economy put little value on speculation and strove for a surplus that could be used to benefit community solidarity through public displays of communal ideals.[19] Lest we risk a descent into romanticism, let us recall that a key element of community solidarity in the southern rice bowl was the maintenance of irrigation facilities.[20] Since the members of the association were consumers as well as producers, their ethics were radically different from those of commercial concerns. They were risk-averse in their pursuit of subsistence and concerned with community rather than personal

[17]For example, expenditures for general distribution (dividends? Exhibit 2, upper sheet, column 11 from left), support of needy dependents (Exhibit 2, upper sheet, columns 1 and 2 from left and lower sheet, columns 1 and 4 from right); Table 1, spring 1819: unhulled rice, lines 10-19, 22-24, and the category of "students, education, charity, public buildings" in Tables 2 and 3.

[18]For example, expenditures for ancestral memorial rites (Exhibit 2, upper sheet, columns 10-19 from right, and lower sheet, columns 5-15 and 17-28 from right).

[19]Speculation would appear in the wider society in the 19th century, but that is another story related to the collapse of the social contract [Jun and Lewis, 2005].

[20]For example, Exhibit 2, upper sheet, columns 8-9 from right.

surplus. In the words of Scott [1976, p. 4], "the peasant household has little scope for the profit maximization calculus of traditional neoclassical economics. Typically, the peasant cultivator seeks to avoid the failure that will ruin him rather than attempting a big, but risky, killing."

To generate subsistence and then surplus required sophisticated technologies to monitor community assets. Without efficient and honest oversight, accounts became corrupted, the social fabric frayed, and the membership, including the accountants, ran the risk of starvation. Therefore, incoming and outgoing goods and money were strictly and rationally audited according to rules determined at the general meetings of the association. The communal value put on honest bookkeeping can be seen in the observance of similar customs in widely differing communities. Certain colleges at Oxford and Cambridge brewed a special "audit ale" to be consumed on the day accounts were audited and merchant accounts settled. Regardless of the effect on accuracy and efficiency, the purpose of the custom was to celebrate a shared, communal economy. A similar custom was practiced on auditing day in Chang`am village when wine was ritually served. The Chang`am Village Association and the MCA had an equivalent to audit ale called *chŏnyosi-chu* ("audit wine"), known to us because it was carefully recorded as an expenditure.

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APPENDIX A

GLOSSARY OF TERMS

chesa-kye (祭祀契) association for rituals
chil (秩) ledger
cho (租) unhulled rice
Chŏlla province (全羅)
chŏn (錢) copper cash unit composed of ten *pun*
chŏn-chil (錢秩) copper cash ledger
chŏnsu (傳受) balance brought forward
chŏnyŏsi-chu (傳與時酒) audit wine
ch`uk (縮) natural loss and transaction cost
ch'ul (出) outgoing
ha (下) expenditure
honin-kye (婚姻契) marriage association
hop (合) smallest dry measure
idu (吏讀) use of Chinese characters to write native Korean words
iik-chil (利益) profit ledger
isang (已上) subtotal
ip (入) incoming
kŏ (去) outgoing
kokja-chil (曲子秩) yeast cake ledger
kŭp (給) expenditure
kŭpch'a-chil (給次秩) liabilities ledger
kye (契) mutual assistance association
kyŏl (結) land measure by production output
Lóngmén bookkeeping (龍門) Chinese style from mid-17th century
mi (米) milled rice
mi-chil (米秩) milled rice ledger
mongmaek-chil (木麥秩) barley
nae (內) from this (total income or assets)
nae[2] (來) incoming
Namp'yŏng Mun clan (南平文氏)
nong'u-kye (農牛契) oxen-leasing association
pan sogyŏng (半所耕) half annual production cost
po-kye (洑契) irrigation association
pong (捧) receipt
pongch'a-chil (捧次秩) assets ledger
pun (分) smallest cash unit
pyŏl yusa-chil (別有司秩) ledger of items specially handled by a bursar
sagae Songdo ch'ibubŏp (四介松都治簿法) term used by modern historians to refer to the accounting system used by Kaesŏng merchants
sang (上) receipt
sang-kye (喪契) funeral association
sangp'yŏng t'ongbo (常平通寶) Korean copper cash coins
shimai chōbo (姉妹帳簿) 'sister ledgers'
sobi-chil (消費秩) loss ledger
sogyŏng (所耕) annual production cost
sojong-kye (小宗契) association of the branch or branch clan
sŏk (石=섬 sŏm) dry measure composed of 20 or 15 *tu*
song-kye (松契) tree-planting association
sŭng (升=되 twe) dry measure composed of ten *hop*

toejaeng-i (되쟁이:升手) village grain handler
taejong-kye (大宗契) association of the head clan
tong-kye (洞契) village association
tu (斗=말 mal) dry measure composed of ten *sŭng*
turak (斗落) land measure by amount of seed required
yang (兩) copper cash unit composed of ten *chŏn*
yen (円 or 圓) modern Japanese currency
Yŏng`am (靈巖) place name
yonghagi (用下記) account ledgers
Yongsan Sŏwŏn (龍山書院) name of a private academy
yu (留) remaining assets
yusa (有司) bursar
zeni (錢) modern Japanese currency, subunit of yen