

On Double-entry Bookkeeping in eighteenth-century Korea:

A consideration of the account books from two clan associations and a private academy

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1. Introduction

Double-entry bookkeeping has been the centre of attention among historians of accounting, because it is a method that has advantages over all other known methods. Comprehensive and orderly records kept in a dual entry format allow the auditor to check the accuracy or completeness of the ledger with ease. Naturally, the development of double-entry accounting remains a favourite area of research. From the latter part of the nineteenth century, many studies have analysed a substantial number of European records (Parker and Yamey, 1994:1-10). This article hopes to contribute to the growing body of information on non-European accounting practices by examining three case studies of Korean accounting from the eighteenth century.

In recent years, many private records and documents from post-1600 Korea have

been gathered and published,¹ but there has been little research on these documents from the perspective of economic history and, least of all, the history of bookkeeping. We now have accounts from village and clan associations and other private civil institutions such as education academies. Below we will examine account runs from two clan associations (1741 – 1883 and 1846 – 1882) and a private academy (1700 – 1705). This article will compare the bookkeeping methods of all three organisations.

We will show that one of the clan association accounts and the accounts of the educational academy were far more elaborate than single-entry records² and argue that they were kept in a form that approximates the double-entry method. We will offer evidence from another clan association that kept its books in a simple fashion to highlight the differences between the simple and the complex. We will argue that sophisticated bookkeeping techniques were a rational approach to the maximisation of utility, and that their application was not limited to commercial transactions. The double-entry system we outline below was applied in late eighteenth-century Korea to aid the administration of a cooperative association and an endowed academic institution, neither of which were commercial entities. The general ethic apparent in the clan association accounts favoured a moral economy, not a profit-oriented commercial economy, and the accounts offer evidence of this moral economy in action. The lack of a profit motive did not prevent the development or adoption of sophisticated bookkeeping methods and suggests that the records of non-commercial organisations, particularly in Korea and China might be profitably mined to add to a global history of accounting.

¹) The collecting, microfilming, and publishing of private, non-governmental records at the Chǒngsin Munhwa Yǒnguwǒn (The Academy of Korean Studies) began publication in 1981 and will continue indefinitely into the future. To date, the Academy has published volume 64 of its *Komunsǒ chipsǒng* (“Collected historical documents”) series. This huge project opens up non-governmental sources for research and has initiated research on Korea after 1600 that will result in extensive revisions of current views.

²) L. W. Hawkins explains the difference between single-entry and double-entry accounting. Both single-entry and double-entry accounting provides a continuous record of transactions; both record the amounts due to and from various individuals, the values placed on property, and the additions and subtractions from those values. Only double-entry accounting provides “the means of bringing together periodically the totals of transactions of various classes, and so ascertaining the result of such transactions, as a whole” (Hawkins 1904:1). We might add that single-entry accounting provides little or no cross-referencing, because entries are only made once; hence errors cannot be easily detected.

2. Working Definition of Double-Entry Accounting

The task of this paper is to demonstrate that the books of the Mun Clan Association and perhaps the Yongsan Academy were kept in a double-entry fashion or something closely approximating it. We will also show that the Yun clan accounts, although possessing some of the organisation and principles of the Mun clan accounts and the Yongsan Academy, lacked certain key elements and this resulted in a very high error rate. For this, we will need to have a working definition of double-entry accounting as a guide. The following notes do not presume to offer an exhaustive definition or a guide derived from late twentieth-century forms. We have merely gathered a few principles from more well-known historical studies of the development of European accounting practices.

Raymond de Roover has specified certain minimum requirements to recognise double-entry accounting and has reminded us of the integrated nature of account books:

...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 (Roover 1956:114).

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

To be called double-entry bookkeeping, B. S. Yamey prefers to see three elements: a consistent entry for each transaction in two different places, a capital account, and a profit-and-loss account (Yamey 1956:6-8 and Yamey 1975:722). More recently, Yamey seems willing to reduce his requirements to dual entry and agrees with Frederic 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

1979:187; Yamey 1992:706). Recording transactions in two different places allows for balancing and from the balances of various subaccounts feeding into a general ledger, a capital account and a profit-loss account can be easily drawn up if required. To these requirements we might add the use of accounting periods and a single monetary unit (Nobes 1994:246).

We will show that the accounts for the Mun Clan and the Yongsan Academy recorded entries in two different places (although not for every entry), that there is an integrated system of accounts, that there is accounting for profit and loss (real and nominal), that there are accounting periods, and that the books balance in the end. We will also briefly consider the societal ethics of the moral economy that produced these accounts. First, however, we should introduce the provenance of the account books.

3. Village and Clan Associations

Mutual assistance associations (*kye*) were widely developed in late Chosŏn (1598 – 1910). Individuals pooled resources to provide insurance for themselves and occasionally others. The associations usually had three aims. The first aim was the public good: provide funds for public works, education, and relief for the poor. The second aim was mutual aid: *honin-kye* provided for marriage costs; *sang-kye* provided for funeral costs; and *chesa-kye* provided for sacrificial rites. The third aim was business or investment financing: *song-kye* provided investment for tree planting; *bo-kye* provided investment for irrigation; and *nong'u-kye* provided for the lease of oxen and ploughs (Shikata 1976: 71). Likewise, there developed many kinds of *kye* in Chŏlla Province. The Mun Clan Associations (Head and Collateral) of Chang'am Village in Yŏng'am county and the Yun Clan Association from Haenam County will be used here as case studies.

Yŏng'am County was an important site for foreign communications and trade in ancient times (Yi 1971: 100).³ At least from the late sixteenth century the county

³) Yi Chung-hwan, *T'aengniji* (c. 1751), (Seoul: Ŭlyu Munhwasa, 1973): 100, “Yong'am County sits beneath Wŏlch'ul mountain. Wŏlch'ul mountain is extremely clear and excellent; like Mars in the morning sky. To the south is Wŏlnam Village and to the west is Kurim Village, both famous at the time of Silla. To the southwest is the sea. During the [Unified] Silla dynasty [A.D. 678—982], everyone going to Tang put to sea from there. A day's voyage reaches Hŭksan Island. From Hŭksan, another day's voyage reaches Hongŭi Island. Yet another day's [sailing] reaches Kaga Island. If you meet rough seas, it takes three days to reach Dinghai District in Taizhou Ningbo Prefecture. But with a good wind, it takes one day. This is the Koryŏ route to the Southern Song.”

contained numerous single-clan villages and has been famous for its many clan and village associations organised by rural scholars. Nearly all villagers were integrated into mutual association systems either through a clan association (*mun-kye* or *chok-kye*) or through a village association (*tong-kye*).⁴ Where the village was almost entirely composed of a single clan, such as Chang`am Village, village and clan associations greatly overlapped. Village associations (*tong-kye*) were horizontally organised and inclusive of all village members, whereas, in theory, clan associations were vertically organised and excluded non-clan members. Among surviving documents we do not have village association accounts, but we have extensive clan association accounts. Because of the heavy overlap between the two organisations in Chang`am Village, we can take the clan association accounts to represent the vast bulk of the village community.

The Namp`yŏng Mun Clan first appeared in the Yŏng`am area when Mun Maenghwa (?—1487) resigned from the government in protest at King Sejo`'s usurpation and retired to his wife`s home area. The clan gained notoriety for its scholarship and his great-grandson, Mun Ikhyŏn (1573—1646), moved into Chang`am Village following the Imjin Waeran (Japanese invasion of 1592—1598). Other branches of the clan were located nearby in Yŏngbo (where Mun Maenghwa lived), Haenam, Hamp`yŏng, and Yulsan.

The Chang`am Village Association was founded in 1667 by eighteen original members and has been sustained to the present. Each of the founders contributed one *sŏk* of rent rice (unhulled) to capitalize the fund. The oldest extant Mun Clan Association constitution from the same village dates from 1686, but the oldest extant document relating to the clan association dates from 1673, indicating that the Association had existed from some earlier, unknown date. The accounts date from 1741 (Chŏng 1995: 3-48; Yi 1988: 98-100; and Kim 1991).

Village associations provided social welfare and insurance and functioned to celebrate good harvests, to worship divinities that would benefit the entire village, and to celebrate the elimination of evil spirits. Clan associations may have had differing or

⁴) Here, we are unable to examine the relationship between village and clan associations and their ideology, expressed in *hyangyak* (village pacts) or *munhŏn* (clan association constitutions), but the concluding comments will return to the material applications of this ideology. We will hypothecate the workings of a “moral economy” in our conclusion, but will defer a full-blown discussion of its wider significance to the future. It is worth noting that Chang`am village was located in a region where Confucianism had developed considerable appeal by the beginning of the seventeenth century.

additional activities, but the chief purpose of both associations was to provide insurance against unforeseen calamity. This meant relief of the misfortune of members due to death, disease, and bad harvests. The Mun Clan Association account books first mention aid for the four mourning expenses,⁵ because funerals presented extreme and unplanned financial difficulties. As time passed, however, the clan account books diversified from providing aid as condolence or aid at a time of distress to celebrating happy events. From the beginning of the eighteenth century, the association's activities expanded to celebrate events such as conjugal harmony between man and wife, a member's sixtieth birthday anniversary, or a marriage. Following on from the celebration of good events, the association's functions expanded further to support education through a village school and library. This suggests that eighteenth century Chang'am had escaped from Malthusian subsistence crises and could indulge concerns not directly related to survival.

Other aspects of Chang'am village life appear in the records. For example, we can see changes in the currency system in the village. In a Village Association record of major events in the village (1667 – 1984),⁶ we see a notice of the first use of copper (from 1706). This would mean that the village economy first used copper coinage twenty-eight years after the central government began in earnest to mint metallic coins (1678) following the *Imjin Waeran* (1592 – 1598), or the Japanese attempt to invade China through Korea.⁷ These coins were known as *sangp'yŏng t'ongbo* ('ever-normal

⁵) The four funerals were: an association member's father, mother, wife, and himself.

⁶) Hanguk chŏngsin munhwa yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21, (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1996), pp. 217-227.

⁷) From 1401, the Chosŏn government followed its predecessor, the Koryŏ, and experimented with mulberry paper money, but with little success. The first copper coins of the Chosŏn were planned in 1415, but not issued. The first coin of the dynasty was issued in 1423 but not widely accepted. In 1445, mulberry paper was again tried, but without success. Arrowhead money was issued in 1464, but achieved only limited circulation. Another coin was issued in 1633 but casting was suspended in 1640 with the second Manchu invasion. Chinese coins were imported in 1650, purchased with Korean silver at an exchange rate of one silver *yang* (37.5 grams) for 813 Chinese coins. Copper cash came as single coins or 1 *pun*. Ten coins made 1 *chŏn*. Ten *chŏn* made 1 *yang*. Since there are 100 coins in a copper *yang*, the ratio for the Chinese coins was 1 silver *yang* to 8.13 copper *yang*. In 1651, the government allowed private minting of copper cash. In 1655, official exchange rates were set: 1 *yang* of silver for 6 *yang* of copper coins and 4 copper coins (4 *pun*) for one *sŭng* of milled rice. The circulation of copper coins failed for various reasons: shortage of copper, ideological opposition by the gentry (*yangban*), under-developed commerce, and inconsistent government policy that rarely required tax payments or offered payments in copper cash. Grains and linen cloth continued to circulate as money. Limited success finally

circulating treasure’). The fact that these coins are mentioned in the clan records indicates that from about 1706, metallic currency was in common use in the Yǒng’am area of southwest Korea. Pre-industrial agrarian change was always slow, but here we have some indication of a rate of change. From studies of North China, Philip Huang is able to suggest that it took at least three generations before secular change was apparent (Huang 1985:47). In southwest Korea, it seems to have taken about one generation for coinage to penetrate. We can also see information on ownership and exchange. For example, the property rights attached to the village storehouse, school, sedan chair, and oxen for ploughing were held by the village association, and the village association lent these assets to its members. The village economy was a small-scale economy based on barter, loans, and the exchange of gifts. There was not much copper cash in circulation locally and neighbours lent goods and items to one another. There is also evidence of various forms of credit among the villagers. We will show examples of credit in our discussion of personal accounts

The village record of major events indicates increasing social complexity. The activities of the *kye* (association) do not show social deterioration, since there is no mention of armament, policing, military, or compensation for loss due to seizure by outside authorities. What is seen is the local view of national events, such as the death and accession of kings. Electric lamps (1946) appear representing local initiatives to modernise infrastructure. In 1980, the association filed an application for protection of cultural properties indicating a sense of corporate responsibility for past, present, and future, reflecting a strong continuity with the founding ideals of community preservation.

Similar to the case of Chang’am village in Yǒng’am county, there were many other

came from 1678 with the issuance of the *sangp’yǒng t’ongbo* coins. The coins were first issued with an exchange value of 4 *yang* (400 coins) to 1 *yang* of silver. From 1679, a larger coin (9.4 grams) was minted with an exchange value of 1 *yang* of copper coins (100 coins) for 1 *yang* of silver, but it actually circulated at 2 *yang* of copper to 1 *yang* of silver. Over the eighteenth and early nineteenth centuries, further mintings put more coins into circulation, but minting was always plagued by a shortage of copper. The 1678 coin continued to be the coin of the realm until the government produced a multi-denominational coin in 1866 that carried a face value one hundred times the old coin. Chinese money was also imported at the same time and Gresham’s law prevailed with the old, higher value coins leaving circulation. Inflation and chaos resulted that lasted into the 1890s, when foreign currencies (Mexican and Japanese) began to circulate with new Korean government issues. Stability did not begin to re-appear until 1904 when Japanese policies imposed order (Pak 1969: 30-91 and 116-145; Palais 1996: 855-876 and 924-1001).

villages in Chŏlla province composed of single clans. For example, in nearby Haenam county Confucianism also had considerable appeal at the beginning of the Chosŏn dynasty. Haenam, like Yŏng'am, is famous for villages that possessed *taedong* customs and was part of the maritime route system that connected the mainland to Cheju island from ancient times (Yi 1973: 102-103).⁸ *Taedong* customs refer to the social system based on Zhu Xi's theories of a moral society and was apparent by the presence of certain institutions: *hyangyak* (community compact), community Confucian shrine, and the organisation of clan and village associations, among others. The most famous clan in the Haenam area was undoubtedly the Haenam Yun clan (Yi 1973: 94).⁹ The Haenam Yun claim an ancient lineage with an ancestor in the early fourteenth century who passed the civil service examination and became an 'advanced scholar' (*chinsa*). Yun Hyojŏng (1476-1543) acquired a *saengwŏn* (classics licentiate) degree, married a daughter of the Haenam Chŏng clan, and came into the great wealth that secured the clan's fortunes. His descendants held a variety of high central and provincial offices (Chŏng 1986: 3-17). In addition to prominent politicians and poets, the Haenam Yun was also the maternal clan for Chŏng Yakyong (penname Tasan, 1762-1836), famous philosopher of the late eighteenth and early nineteenth centuries, making Haenam a famous cultural site.

4. Bookkeeping in the accounts of the Mun clan: double-entry?

The account books or *yonghagi* are the most important archives among the materials preserved from the Mun clan association. Six account books covering the period from 1741 to 1927 from the main clan association and four account books from 1819 to 1881 from a collateral clan association are available to us.¹⁰ The following

⁸) Yi Chung-hwan, *T'aengniji* (c. 1751), (Seoul: Ŭlyu Munhwasa, 1973): 102-103, "Eight counties located along the southeast shore from Yŏng'am have [what are commonly called] the *taedong* customs. Among these counties Haenam and Kangjin were the maritime gateways to Cheju island."

⁹) Yi Chung-hwan, *T'aengniji* (c. 1751), (Seoul: Ŭlyu Munhwasa, 1973): 94, "...there are quite a few distinguished people [born of the] spirit of the land [of Chŏlla province]. For example, there are Ki Taesŭng (penname: Kobong) from Kwangju, Yi Hang (penname Iljae) from Puan, Kim Inhu (penname Hasŏ) from Changsŏng, famous as a moral philosopher, Ko Kyŏngmyŏng (penname Chaebong) and Kim Ch'ŏnil (penname Kŏnjae) from Kwangju, both of them famous for their fidelity to principle (*i*). [There is] Yun Sŏndo (penname Kosan) from Haenam..."

¹⁰ Main Clan: Volume 1 (1741 – 1765); Volume 2 (1779-1805); Volume 3 (1806-1816); Volume 4 (1843-1849); Volume 5 (1850-1871); Volume 6 (1884-1928); Collateral Clan: Volume 1 (1819-1826); Volume 2 (1827-1841); Volume 3 (1845-1863); and Volume 4 (1864-1881).

discussion limits itself to the main clan association books.

The form of Volume One (1741-1765) differs from all the later volumes. It starts out as a simple record and in the 1760s takes on a double-entry form¹¹ that becomes the pattern for all later volumes. Volumes Two through Six are elaborate accounts, which record receipts and expenses in a sophisticated double-entry form. The evolution of the recording after Volume One was likely caused by the growth of the financial scale of the *kye*.

The volumes were first analysed for information on commodity prices, but the question of credibility arose, and the accounts were examined for their accuracy. This led to a consideration of the accounting method that was used, which is the concern of the present study. Below, we will discuss accuracy, but we might note that because of the high accuracy rate, we have determined that these accounts are an extremely credible source for commodity price information. Other points include the appearance of certain commodities and even coinage. Above, we mentioned that other village association records allow us to date the entry of coinage into the southwest of Korea. In Western Europe, the period between 1500 and 1800 was a transitional period from payments in kind or services towards payments in money (Slicher van Bath 1977:105-106). One feature of the clan accounts used here is that they begin when the village was already in the midst of a money economy. Although currency appears in the clan association account books, its use is not simple. Receipts and expenses were managed in three currencies: unhulled rice, *sangp'yŏng tongbo* or a minted copper-bronze coin, and milled rice. The rice payments can be thought of as payments in kind, but of such a universal and standardised kind that they actually functioned as money. We can refer to unhulled and milled rice as “rice money”, consumable and storable specie, although containing a depreciation value.¹² Strangely, however, although the books come into the late nineteenth and early twentieth century, their copper cash accounts do not show the use of Japanese *yen* until early 1928 or at the very end of Volume Six. 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.

Setting aside matters of the larger economic transition in Korea,¹³ we now turn to

¹¹ Clan account books in China have been brought to light as rich sources for the history of prices. For example, rice prices for 1684 to 1802 have been published by Tanaka Issei (1986), but these records are based on simple, single-entry records.

¹² We will return to this question below in our discussion of real and nominal accounts.

¹³ Views on Korean economic development from the seventeenth to the twentieth

the matter of double-entry accounting in eighteenth-century Korea. The following discusses five separate issues in bookkeeping concepts and methods that appear in the clan accounts. Two of these are absolute minimum requirements to identify a set of accounts as having been kept in a double-entry fashion: personification, which shows dual entries, and real and nominal accounts. Personification refers to particular sub-accounts that are sequestered out of a complex web of transactions and given ledgers of their own as if the accountant were giving them each their own lives. If personification was the means to an end, then the objective was error identification, since this is the reason to develop methods that ensure accuracy. Related issues are the mechanics of record keeping, the explicit recording of transaction costs, and the appearance of personalised accounts associated with individuals.

4-1) The Personification of Accounts (*Chil*: 秩)

The attribution of a living, independent personality to accounts must have had its roots in the very earliest forms of bookkeeping (Jackson 1956:295).

According to J.G.C. Jackson, the teaching of accounting in England from the seventeenth to the late nineteenth century developed from the rote application of procedural rules to a rational application of judgement based on the concept of personified accounts. All double-entry accounting can accommodate – even 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, the transaction 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 account as a group of clerks working for an owner and setting all accounts in relation to each other as either receiving or paying, complex accounts could be easily handled and error detected by comparing the entries and totals in the various sub-ledgers. When all sub-ledgers are reconciled in the master or general ledger, the books are balanced. If not,

centuries are currently being radically revised in the light of newly available evidence from provincial sources such as the records being discussed here. Because a consensus has yet to emerge, and a review of the debate deserves extensive treatment, we have foregone a protracted discussion that would distract attention from the case study in hand.

then the accountant or auditor has to search for the mistake. This simple outline of personification is all we need, because Jackson points out, after surveying pedagogical texts from the early seventeenth to the late nineteenth century, that “the practice of explaining the entries to be made in the ledger by means of personifying the accounts is found in the very earliest British texts and must be closely linked with the very origin of the system of bookkeeping” (Jackson 1956: 296).

When looking at the Mun clan account books (Illustration 1: “1741 Accounts” and Table 1: “Original Text and Translation for 1741 Accounts”), we can see the beginnings of personification. Two different types of written characters – ordinary and large – were employed to facilitate classification with indentation technique. The large character had two usages: marking years and accounts. In the 1741 accounts, we see large characters marking the year, rental income, and rice on hand. By 1744, the use of large characters had disappeared and the reporting period had gone over to a biannual format. Reporting had been only in the twelfth month, but now reporting occurred in spring and autumn. 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 (*chǒn-chil*). *Chil* disappeared in 1759 and reappeared in 1761. In 1762, *chil* is first used to mark off the accounts devoted to milled rice (*mi-chil*). We also see the appearance of a number of other technical terms that slowly achieved a concise meaning. For example, from 1742, we see *nae* to indicate the meaning, ‘from this amount’. From 1745, we see *chǒn* to indicate ‘carry down’. We will return to a discussion of technical terms below, but first we should focus on the use of *chil* to create personification.

The first volume of the *yonghagi* runs from 1741 to 1765, and by the spring of 1765, we see the previous autumn’s unhulled remainder carried down to begin a new account. We see an integrated account structure, sub-accounts within the general ledger, and the use of the term *ch`uk* to indicate ‘depreciation.’ In short, by 1765, we see all the elements that we will examine below to argue that the accounts were kept in a double-entry fashion.

The development of personification can be seen over the period from 1741 to 1765. Up to the 1760s, the use of *chil* to mark sub-categories was irregular. But slowly, items were grouped by this suffix into their own accounts and real and nominal transactions appeared. For example, the account ledger for 1741 put together unhulled rice accounts and copper cash accounts. But copper cash accounts were grouped under a sub-heading (*pyǒl yusa chil*) that means “[items] specially managed by the bursar.” *Pyǒl* means special. *Yusa* means the bursar for the clan association, a title that is still used today. *Chil* means order, system, or regularity if read at face value, but when read

in this context, it is being used as a suffix that represented an act, a role, or a part being played by a specific group of like transactions. In the accounts for 1741 (Table 1), the usage of *chil* was limited to items specially managed by a bursar, and the term *chil* generally appeared in size and shape similar to other terms and entries. For example, in the 1741 ledger (Table 1, line 6) *chil* indicates a set of transactions buried within a larger set of transactions, but in the 1793 ledgers, such transactions have been extracted, put into their own ledger, and *chil* has been attached as a suffix to identify milled rice, copper cash, barley, and yeastcakes. *Chil* became the suffix that marked out an entire and independent set of accounts or a sub-ledger that had to be reconciled with all other sub-ledgers to balance the general ledger, which was unhulled rice, the single most important production commodity. *Chil* was used to indicate a certain account as though that account were a person acting independently in relation to the master or general ledger (unhulled rice) and other accounts. In 1741, the separation had not yet occurred and a clear distinction between real and nominal accounts had not yet been made. As time passed, specific commodities – particularly milled rice, yeastcakes, barley – and copper cash were given their own accounts with debit and credit transactions as if the goods and the copper cash were living persons.¹⁴ Since commodities and copper cash cannot trade themselves, the presence of the accountant or the bursar is assumed, and special terms (i.e. *pyŏl yusa*) disappear, leaving only *chil*, meaning “account”. Of course, the owner is the association.

By 1793 (Table 2) we can see the full development of independent, personified accounts.¹⁵ In the 1793 accounts, *chil* has been elevated to act as the title suffix for all sub-ledgers, endowing them with individual personalities. The sequence of ledgers was standardised by the 1760s, and we see the standard sequence in the 1793 accounts: unhulled rice (*cho*), milled rice (*mi-chil*), and copper cash (*chŏn-chil*) in the spring. These are followed by the autumn accounts for unhulled rice, milled rice, copper cash, barley (*mongmaek-chil*), and yeastcakes (*gokja-chil*).

After the autumn accounts, we see closure 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 association, indeed from outside the village, invited to provide objectivity. Objective auditing enforces accuracy and

¹⁴ *Chil* and its use to personify accounts was described by Hyŏn Pyŏngju in 1916 when he reported on the methods reputedly handed down from the thirteenth century and still in use by Kaesŏng merchants in the early twentieth century (Hyŏn 1916: 6 and 20).

¹⁵ The accounts for 1793 are used because the document source is very clear and complete with no missing information.

transparency, and trust is the result.

For example, consider some of the entries in Table 2 for the spring 1793 recording period. Line 22 of the Unhulled Rice ledger indicates that 210 *tu* of unhulled rice (credit) was converted into 84 *tu* of milled rice. This milled rice appears in line 2 of the Milled Rice Ledger. Or, another example, in line 21 (credit) in the unhulled or “cash” ledger, we see 319.2 *tu* of unhulled rice traded for 58.1 *yang* of copper cash, and we see an entry for 58.1 *yang* in line 2 (debit) of the Copper Cash Ledger. Table 3 collects such dual entries for the 1793-1795 accounts.

Table 3 Dual Entries in the Mun Clan accounts for 1793-1795

Line	Reporting Period Ledger Name	Debit	Credit
1	Spring 1793 Unhulled Rice		319.2 <i>tu</i> for 58.1 <i>yang</i> of copper cash (line 21)
2	Spring 1793 Copper Cash	from unhulled ledger: 58.1 <i>yang</i> (line 2)	
3	Spring 1793 Unhulled		210 <i>tu</i> into 84 <i>tu</i> of milled rice (line 22)
4	Spring 1793 Milled Rice	from unhulled rice: 84 <i>tu</i> (line 2)	
5	Autumn 1793 Yeastcake		40 yeastcakes sold for 4.46 <i>yang</i> (line 5)
6	Spring 1793 Copper Cash	from yeastcake ledger: 4.46 <i>yang</i> (line 3)	
7	Autumn 1793 Autumn Rent (unhulled rice)		20 <i>tu</i> converted to 8 <i>tu</i> of milled rice (line 11)
8	Autumn 1793 Milled Rice	from Autumn Rent: 8 <i>tu</i> (line 1)	
9	Autumn 1793 Autumn Rent (unhulled rice)		4 <i>tu</i> to purchase 3 <i>tu</i> of buckwheat (line 14)
10	Autumn 1793 Buckwheat	“newly supplied” (from autumn rent?): 3 <i>tu</i> (line 2)	
11	Spring 1794 Unhulled Rice		500 <i>tu</i> traded for 40 <i>yang</i> of copper cash (line 28) and 85 <i>tu</i> traded for 6.8 <i>yang</i> of copper cash (line 31) = total: 46.8 <i>yang</i> copper cash
12	Spring 1794 Copper Cash	from unhulled rice: 46.8 <i>yang</i> (line 2)	
13	Spring 1794 Unhulled Rice		80 <i>tu</i> converted to 32 <i>tu</i> of milled rice (line 29) and 40 <i>tu</i> converted to 16 <i>tu</i> of

			milled rice (line 30) = total: 48 <i>tu</i> of milled rice
14	Spring 1794 Milled Rice	from unhulled rice: 48 <i>tu</i> (line 1)	
15	Autumn 1794 Yeastcake		10 yeastcakes sold for 2 <i>yang</i> of copper cash
16	Spring 1794 Copper Cash	from yeastcakes: 2 <i>yang</i> (line 3)	
17	Spring 1795 Unhulled Rice		61 <i>tu</i> traded for 8.54 <i>yang</i> of copper cash (line 33)
18	Spring 1795 Copper Cash	from unhulled rice: 8.54 <i>yang</i> (line 2)	
19	Spring 1795 Unhulled Rice		154.8 <i>tu</i> converted to 54.18 <i>tu</i> of milled rice (line 32)
20	Spring 1795 Milled Rice	from unhulled rice: 54.18 <i>tu</i> (line 2)	
21	Spring 1795 Milled Rice		23.3 <i>tu</i> traded for 11.54 <i>yang</i> of copper cash (line 5)
22	Spring 1795 Copper Cash	from milled rice: 11.54 <i>yang</i> (line 3)	
23	Spring 1795 Copper Cash		1.02 <i>yang</i> traded for 13 yeastcakes (line 19)
24	Autumn 1795 Yeastcakes	newly supplied 13 yeastcakes (line 2)	
25	Autumn 1795 Copper Cash		19 <i>yang</i> traded for 190 <i>tu</i> of unhulled rice (line 6)
26	Autumn 1795 Autumn Rent (unhulled rice)	from copper cash: 190 <i>tu</i> (line 6)	
27	Autumn 1795 Autumn Rent (unhulled rice)		1.5 <i>tu</i> traded for 1 <i>tu</i> of buckwheat (line 29)
28	Autumn 1795 Buckwheat	newly supplied 1 <i>tu</i> (line 2)	

Source: Table 2.

The conception of personification with *Chil* have developed is the practice of recording the financial relationship between the member of clan association and their *yusa*(有司) or accountant. These are a kind of the pigeonholes to fuse all these heterogeneous elements into an integrated system of classification which rested on the principle of dual entries for transactions. Whatever may have been its origin, the practice of explaining the entries to be made in the ledger by means of personifying the accounts is found in the *younhagi* and is closely linked with the origin of the system of the *sagae [songdo] ch`ibubö*p introduced by Hyön Pyöngju(1916).

4-2) Developments in the Mechanics of Bookkeeping

Writing in premodern Korea was in the East Asian vertical style: top to bottom, right to left. Naturally, the account books of the Namp'yŏng Mun clan were written in this fashion. All account books must have a method to distinguish verbally and visually between debit and credit. Littleton 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 nineteenth century (Littleton 1956: 232-233).¹⁶ By the eighteenth century, the accountants for the Mun clan had developed indentation, special terms, size and word order as their technical vocabulary to record entries.

The most important discrimination was between debit and credit and this came to be indicated with a special term: *nae*. In the 1741 account (Table 1, lines 2 and 3), we can see *yu*, which means 'remaining' (in bold in Chinese and English). The same term also appears in line 12, and in both cases, *yu* seems to indicate old grains kept in storage. As soon as the following year, *yu* was disappearing and *nae* was beginning to appear. Within the decade *nae* was the standard term with the clear meaning of 'total income or assets from which expenditures' would be deducted. In Illustration 2 for the 1793 accounts, *nae* appears at the end of second column from the far right on the top row and again at the end of the third column from the far left on the top row. In the Mun clan registers, debits were recorded to the right of *nae* and credits to the left of *nae*. Table 2 has converted the vertical recording of the 1793-1795 accounts to a horizontal style and the term *nae* appears in line 1 (debit) and is translated as "from this [the following expenditures were made]". This use of the term *nae* to divide expenditures from assets is not unusual in East Asia. For example, we can see it used for this purpose in Japanese trade ledgers kept by the Tsushima *han* to record trading with Korea in the eighteenth century (Illustration 3 and Table 4 for translation). Hyŏn Pyŏnju's 1916 work explaining the workings of the methods employed by Kaesŏng merchants also outlines the use of *nae* in the same fashion (Hyŏn 1916: 25).

¹⁶) Littleton 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." (Littleton 1956: 233)

From as early as the 1740s, the Mun Clan accounts also employed word order (whether words or numbers came first) to indicate clearly the difference between debit and credit. In Illustration 2 and Table 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 indicated a negative entry (payment).¹⁷ For spring accounts, the debit entries all begin with ‘carry down’ (*chõnsu*), but autumn debit entries often begin with ‘remaining’ (*yu*), i.e., remaining from the previous accounting period. Also from the mid-1750s, entries for expenditures came to carry a final character, *ha*, which indicated ‘expenditure’. For example, in Illustration 2, following the columns that end in *nae*, all expenditure entries end in *ha*, except final entries that might express ‘remainder’ (*yu*) or ‘depreciation’ (*ch`uk*).¹⁸ From 1755, subtotals are marked off at the end of sections by the term *isang*, but the use is inconsistent until the records pick up again from 1779 after a gap from 1765 to 1779.

Although the terms *nae* and *ha* appear early to distinguish debits from credits, we do not see extensive indentation until much later. The technicality of indentation was clearly developed by the nineteenth century in English accounting and indicated a separation between debits and credits (Littleton 1956:232). Littleton points out that the

¹⁷) It is not possible to discuss the debate over the relationship between accounting and the adoption of negative numbers. “Debt” is an ancient concept, at least as old as Sumerian IOUs from the fourth millennium B.C., and negative numbers were recognised in China as early as the third to fifth century A.D., but the linkage between the practical concept of debt and the abstraction of negative numbers is unclear. Part of the debate is over which came first: debts as negative entries or a concept of negative numbers that allowed negative entries to indicate debts in accounts. Kautilya’s *Arthaśāstra* (ca. 300 B.C.) offers a clear explanation of debt, and this bookkeeping concept well preceded the earliest attested Indian acceptance of negative numbers from the seventh-century A.D. If early Indian accounting contributed to the acceptance of negative numbers, then is it possible that European-style accounting in the debit/credit scheme, which works entirely within positive numbers, contributed to the European resistance to recognise negative numbers, at least until the nineteenth century (Mattessich 1998)? “Negative” in this paper simply means credit entries, and the transactions in these accounts work within positive numbers.

¹⁸ Other technical terms that do not appear here should be borne in mind. For example, *pong* or *sang* meant receipt, *kũp* or *ha* (the *ha* that is mentioned above) meant expenditure, *ip* or *nae*² meant incoming. This is a different character from the *nae* discussed above and is in the glossary as *nae*². Finally, *ch`ul* or *kõ* meant outgoing. These are the meanings derived from the Mun Clan accounts, but the terms and their meanings correspond to the description of Kaesõng merchant practices (Hyõn 1916: 18-26).

custom was to indent credits below debits. In Illustration 1, we can see some experimentation with indentation, but consistency does not appear until 1785. Illustration 2 for the 1793 accounts shows an indentation style that remained consistent for the next century or more: debit entries began above credit entries. In short, by the 1780s, the above technicalities produced pages of entries that were very easy to follow, and the placement of entries on the ledger page indicated their relationships to each other.

4-3) Personal accounts and a division of administration

B. S. Yamey presents four possible approaches to the origins of double-entry bookkeeping. Perhaps it was created by the work of a single gifted inventor or it was a triumph of the milieu of the Renaissance. A third possible approach is to regard double-entry bookkeeping as an accidental technical development from simpler forms that grew by a gradual process of accretion and adaptation. The fourth view would consider double-entry bookkeeping as a response to “new or growing business needs not satisfied by earlier methods of record-keeping” (Littleton and Yamey 1956: Introduction 2). The differences between the 1741 and the 1793 documents examined here would indicate that techniques grew by a gradual process of accretion and adaptation that employed customary techniques already in existence.¹⁹ The earliest

¹⁹ We have not included a discussion of the indigenous Korean accounting technique known as the *sagae [songdo] ch`ibuböp* (four-sided [Kaesöng] ledger method) used by merchant and banking houses. It is widely believed to have been used by the merchants of Kaesöng as early as the mid-Koryö period (11th-13th centuries) in connection with Koryö’s extensive trade with mainland China and Arabian merchants, or it may have been appeared in the succeeding Chosön period (1392-1910). Information on the system is available in Korean (Hyön 1916, Kang 1978, Yun 1978 and 1984, and Cho 2000) and outlined in English (Yun 1977). Actual specimens older than the mid-nineteenth century are not available, although Zenshō Eisuke reports that, in 1921, when he was conducting a study of Korean accounting for the colonial authorities, he saw account books from 1771 or 1781 that used this system. These account books may be extant in a library in Kaesöng (Zenshō 1968: 119). Hyön, Kang, Yun, and Zenshō all argue that the system is comparable to the Venetian ‘double-entry’ system, perhaps even more elegant. The system is ‘four-sided’ because it requires recording the receiver’s name, the giver’s name, the object/cash received, and the object/cash given. Fundamentally, it

records from 1741 already grouped items under appropriate headings and indicated the gestation of sub-accounts. By the 1760s, these sub-accounts had been separated into their own ledgers to be factored back into the general ledger to produce a balance.

The books kept between 1819 and 1883 by a branch or collateral clan (*sojong-kye*) of the Mun Clan appear completely evolved from 1819, but they display different emphases from the head clan accounts. Certainly, the head and collateral clan books display a division of administration. In particular, the collateral clan's books contain personal accounts. They do exist in abundance throughout the branch clan records. Personal names or house names were often recorded next to credit or expenditure items for seed and tillage. The fact that names were attached to transactions is a significant refinement over the head clan accounts. Table 5 is an extract from the collateral clan accounts and presents the unhulled ledger for 1819. Lines 5-7, 11-18, and 22-24 are all personal accounts.

These personal accounts link communal and private concerns. Of course, the associations kept such elaborate records because they dealt with joint common property, but the personal accounts demonstrate that private concerns were disaggregated. Individual names indicate that the economic stability of the village community was not a faceless collective concern but relied on individual responsibility.

Individual household responsibility seems to have been at the base of production. This becomes apparent when we compare the structure of payments for the head clan (Table 6) with those of the collateral clan (Table 7). Head clan expenditures focus on the purchase of copper, milling unhulled rice, paying out dividends, and extending funds for ancestral rites. Copper could be used to purchase specialised items for labour and celebrations. These expenditures affected the entire community. Their prominence indicates the head clan's overarching concern for the greater community, in part derived from ideological commitment and in part derived from an assumed responsibility to maintain prestige. Collateral clan expenditures are more evenly spread over a variety of local, immediate concerns. There are significant productive payments (seeding and tillage costs within personal accounts), but the largest group of expenditures were for unproductive activities: students, education, charity, and public

requires a dual entry for each transaction. Cho Iksun disagrees. He argues that the extant materials do not justify being called 'double entry' and doubts that such a sophisticated system is even possible in East Asia where Arabic numerals were not used and Chinese script lacks the zero, among other problems (Cho 2000: 300-302).

buildings.

The differences between the structure of the head clan expenditures and those for the collateral clan indicate that the branch clan formed the basic unit of production and supplied most social welfare. The head clan's use of unhulled rice was to manage the external relations that affected all members of the association. In some ways the head clan's expenditures related to the external economy and the collateral clan's expenditures related to the internal economy. There was clearly a tiered aspect to the management of the village economy highlighted by the fact that personal accounts were to be found in the collateral clan's records. It seems that the head clan and the collateral clans were engaged in a reciprocal and complementary relationship to ensure overall village stability. The size of the unproductive payments also indicates that the majority of village members had escaped from subsistence crises during the eighteenth and early nineteenth centuries.

4-4) Transaction and Depreciation Costs –Depersonalised mathematical approach to book-keeping

-----Discussions is in terms of conversions rather than debt relationships; of impersonal statistical relationships rather than debt relationships; of analysis rather than rule and rote. Accounts are “increased” or “decreased” rather than “debited” or “credited.”(Jackson 1956: 307)

The accounts of the Mun clan do not contain explicit transaction costs. What we do see is the term *ch`uk*, which we have translated as ‘depreciation’. We hypothesize that this term indicated the natural loss of grains to vermin and rot as well as the transaction costs involved in milling unhulled rice into polished, milled rice. *Ch`uk* is always present in unhulled rice accounts and often present in milled rice accounts, but is seen in no other accounts.

Table 1 presents a general ledger for the year 1741. In line 17 we see 4 *sŭng* recorded as a ‘depreciation’. 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 believe that this ‘shortfall’ was a depreciation cost or loss to water and rats. In the milled rice accounts for spring 1793 and spring 1795 we also see ‘depreciation costs’ also probably because of rats and water. This ‘depreciation cost’ would not have contained any further transaction costs after milling, so these costs are most likely purely depreciation.

Table 2 presents the ledgers for the years 1793-1795. In the unhulled rice accounts for spring 1793, spring 1794, and spring 1795 we see 'depreciation' and in the same accounts, unhulled rice was milled. Most likely, this 'depreciation' contained both real depreciation and transaction costs. Transactions with rice were always attended by the cost of milling. Traditionally in rural village markets, there was a *toejaeng-i*, who measured and milled grain, and afterwards took a commission (Kim 1977: 299-300). With just our small sample, we can get a glimpse of what might have been the relative size of the depreciation cost and the transaction cost. Table 8 presents examples extracted from the accounts for 1741 and 1793-1795.

Table 8 Depreciation and Transaction Ratios

Ledger	<i>ch`uk</i> (縮) ratio	Depreciation / Transaction
1741	0.9%	Depreciation
1793 spring Unhulled	4.7%	Depreciation + Transaction (pure Transaction: 4.3%?)
1793 spring Milled	0.4%	Depreciation
1794 spring Unhulled	4.1%	Depreciation + Transaction (pure Transaction: 3.7%?)
1795 spring Unhulled	3.2%	Depreciation + Transaction (pure Transaction: 2.8%?)
	4.9% ^{a)}	Depreciation + Transaction (pure Transaction: 4.5%?)
1795 spring Milled	0.4%	Depreciation

Source: Tables 1 and 2.

^{a)} Includes 9 *tu* as 'lost'.

Depreciation from vermin and rot was probably a reasonable 0.4%, and transaction costs may have ranged between 3.7% and 4.5%. The high numbers for the spring of 1795 (4.9%) may be attributable to the bad crop from the previous autumn of 1794 (Table 9). There is a curious entry in the 1795 spring Unhulled ledger for 'lost' rice (1.7% of the crop). If we include this with depreciation, the totals are consistent with the other years and consistent with a bad economic situation for that spring.

Table 9 Unhulled rice on hand, 1793-1795

Year	Unhulled rice on hand
1793 spring	841 <i>tu</i> (carry down)
1793 autumn	844 <i>tu</i>
1794 spring	892 <i>tu</i> (carry down)
1794 autumn (bad harvest)	558 <i>tu</i>
1795 spring (low carry down)	540 <i>tu</i> (carry down)
1795 autumn (recovery)	915 <i>tu</i>

Source: Table 2.

Although depreciation is universally understood, the full gamut of transaction costs is invisible only to doctrinaire neoclassical economists who simplify matters in an attempt to depict the "frictionless" operation of the market (North, 1981:5). Transaction costs are not only the cost of converting one commodity to another or the

handling charges that derive from services rendered; they also include the costs of policing the market to insure sufficient security, the costs of infrastructure and support, and other costs that are generally borne by the wider society in its commitment to creating favourable circumstances for the market to operate. Most directly, they are the costs associated with creating and enforcing contracts (North 1985:557-558). In short, “transaction costs underlie the institutions determining the structure of political-economic systems” (North 1981:ix).

It follows that an awareness of transaction costs is an awareness of the wider burden carried in order to create and maintain any market, even any transaction. More basically, an awareness of transaction costs indicates an appreciation of total costings and a desire for accuracy. The Mun Clan accounts demonstrate a clear concern with transaction costs. Other explicit transaction costs appear, for example, as the cost of the paper to record a land sale (spring 1793, Copper Cash ledger, line 6). Implicit transaction costs appear elsewhere as travel expenses to conduct transactions in distant places or to visit government officials on business.

Transaction costs in Chosŏn Korea were widely recognised. Because rice was an important commodity, even functioning as money, the Chosŏn state had to be able to detect deviations from the rules and customs and be able to regulate compliance. We cannot explain all the transaction costs involved in creating and maintaining institutions to regulate the rice markets, but we might note that the central government was concerned with the minutiae of the market and even changed the standard shape of measures from a simple box to a trapezoid in 1715 to remedy the problem of extracting exorbitant handling fees. A wide-mouth box allowed the abuse of “heaping measures,” whereas a trapezoid, with its narrow mouth, wider bottom, and taller body, prevents this and helps ensure that every measure is more exact.²⁰

4-5) The overall bookkeeping system: linked single-entry in a double-entry framework

Until now, we have endeavoured to suggest that the bookkeeping in the clan accounts carried certain aspects of sophisticated accounting and that approximated double-entry accounting: personification of accounts (with real and nominal entries), recognition of transaction and depreciation costs, certain mechanical innovations (vocabulary and appearance) that separated debit and credit entries, and the presence of

²⁰) *Sukjong* issued an order in 1715 to the Board of Taxation that trapezoid measures should be distributed nationally. *Sukjong sillok* 56:1a [1715/02/08].

personal accounts. In the end, though, all of these features are merely aspects of form. It is now necessary to show the integration of the accounts and when they were balanced.

Annually from 1741 to 1744, a single account extended over the entire year and took the full year as a single accounting period. From 1744, the accounts broke the fiscal year (lunar twelfth month to lunar twelfth month) in half. The first half (“spring”) opened the fiscal year and extended to the harvest, roughly in the sixth to eighth months. The second half (“autumn”) stretched from the harvest to the closing of the fiscal year thus creating two accounting periods. The development of two closing periods in a single year necessitated the innovation of a new special term that indicated “balance brought forward.” Our example (Table 2) of accounts for the spring of the year 1793 starts with the term *chōnsujo* (line 1), which literally means the “unhulled rice balance brought forward from the last account to open the new account.” The term *chōnsu* is the core term for “carried forward” or “carried down” and appears in the various accounts presented here. These terms designated the starting balance and brought forward the closing entry obtained from the previous ledger, closed at the end of the last accounting cycle. The accounting periods were clearly indicated, so we know where to look for balances.

Even though the accounts possessed these technical aspects, we still must demonstrate that entries were recorded in more than one place sufficient to allow cross-referencing, a trial balance, and the identification of error. We do not see every entry recorded in more than one place, and in this strict sense, the accounts are not double-entry. In fact, they have every appearance of being an elaborate set of single-entry accounts linked together to allow cross-referencing and balancing. In other words, the sub-ledgers for milled rice and copper cash, kept in single-entry form, were linked into the general ledger for unhulled rice. The amounts of the capitalizations for the milled rice and the copper cash sub-ledgers are recorded in the general ledger, which was zeroed out in the spring accounts and then re-filled in the autumn after the harvest. The primary reason for these double entries may well have been because the association had to keep track of various commodities that were interchangeable. As mentioned above, there were three commodity accounts: unhulled rice, milled rice, and copper cash, all interchangeable, since all three commodities were viewed as “money.” As the stores of one rose, another fell, and the account books were careful to record the fluctuating value of assets on hand. The fact that the unhulled ledger was always balanced in the spring meant it acted as the most important “cash” account.

An elaborate single-entry system can come very close to a double-entry system, but

the great advantage of double-entry is the identification of error. The fact that errors can be found demonstrates that the account books were meticulously recorded. Since errors in premodern and modern account books in Western Europe are common,²¹ their presence here is not unusual, but few errors have been found in the Mun Clan ledgers. The errors that did appear were often related to outstanding rent or grains borrowed, and occasionally mistakes were made in recording. When the mistake was discovered, notes were added around the entry in the ledger to indicate that it was an error and to indicate into which sub-ledger or journal the entry had gone to correct the error. Such entries demonstrate that the general ledger was not just a list of payments from a capital account, but was the pinnacle of an elaborate set of day-books and sub-ledgers that posted to it. Table 10 shows the incidence of error between 1781 and 1808 for conversion of rice to copper cash. The error rate is 2.7%. Below we will compare this rate to the rate of error in the Yun Clan accounts, a set of records kept in an unsophisticated single-entry fashion.

The Mun Clan accounts were linked together. Not all transactions were entered twice, so the accounts were not perfect double-entry accounts, but we believe that the fundamental principle of dual entry for the purpose of cross-referencing is clearly in evidence. The dual entries are limited, but the form developed within the ledgers allows the easy tracking of assets and offers the possibility of trial balances. The fact that errors could be found, corrected, and erroneous entries transformed to their proper accounts testifies to the accuracy of the system.

Table 10 Error in the Mun head clan account books for the period 1781-1808

line	year	season	<i>tu</i> (a)/ decimal <i>sōk</i>	total <i>yang</i> (b)	correctly calculated for 1 <i>sōk</i> (c = total <i>yang</i> / decimal <i>sōk</i>)	actual record (per <i>sōk</i> or per 20 <i>tu</i>)	error (e = c - d)
1	1781	spring	820.00/ 41 <i>sōk</i>	67.65	1.65	1.65	0.00
2	1781	autumn	63.20/ 3.16 <i>sōk</i>	6.00	1.90	1.90	0.00
-	-	-	-	-	-	-	-
8	1783	spring	66.00/ 3.3 <i>sōk</i>	10.70	3.24	a)	-
-	-	-	-	-	-	-	-
22	1786	autumn	26.00/ 1.3 <i>sōk</i>	4.60	3.54	*	-
-	-	-	-	-	-	-	-

²¹) "...medieval [European] balance sheets do not always balance, because the bookkeeper was either unsuccessful or neglectful in tracing and correcting small differences" (Roover 1956:114-115).

50	1793	spring	319.20/ 15.96 <i>sŏk</i>	58.10	3.64	3.70	0.06
57	1796	spring	96.00/ 4.8 <i>sŏk</i>	11.52	2.40	b)	
58	1796	spring	85.00/ 4.25 <i>sŏk</i>	11.70	2.75	2.70	0.05
-	-	-	-	-	-	-	-
98	1808	spring	345.00/ 17.25 <i>sŏk</i>	29.32	1.70	1.70	0.00
99	1808	spring	180.00/ 9 <i>sŏk</i>	15.30	1.70	1.70	0.00
100	1808	spring	320.00/ 16 <i>sŏk</i>	28.80	1.80	1.80	0.00
101	1808	autumn	300.00/ 15 <i>sŏk</i>	25.50	1.70	1.70	0.00
Error rate = 2.7% (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'

5. Bookkeeping in the accounts of the Haenam Yun clan: single-entry

The Haenam Yun clan also had a clan association, which kept account books. The extant volumes number four, as illustrated in Table 11.

Table 11 Haenam Yongdong Village Yun clan account books

Volume numbers	Chinese characters	Korean pronunciation	Recorded period	Lacuna years
Volume 1	觀仙契冊	<i>Kwansŏngye ch'aek</i>	1827-1850	1828, 1834, 1835
Volume 2	金鎖古淡契冊	<i>Kŭmswae kodangye ch'aek</i>	1823-1876	1826, 1841, 1853-1855, 1862, 1867, 1869, 1871, 1873-1875, 1877-1878
Volume 3	蓮浦門契冊	<i>Yŏnp'o Mungye ch'aek</i>	1846-1882	1877-1878
Volume 4	古墻契冊	<i>Kojanggkye ch'aek</i>	1833-1877	1854, 1856, 1863, 1866

Source: Hanguk Chŏngsin Munhwa Yŏn'guwŏn, *Haenam Yun-ssi komunsŏ*, Tosŏgwan microfilm no. 35-003212 (Volume 1); no. XXXXXXXXX (Volume 2); no. 35-003213 (Volume 3); and no. XXXXXXXX (Volume 4).

The form of the information recorded is a simple single entry. Most likely, since the accounts were within a single clan that operated in a hierarchical fashion, there was no auditor no public review of accounts, and therefore no need for great accuracy. An example follows:

丙午十一月十九日講信⁽¹⁾²²
 乙巳元錢⁽²⁾二十五兩七錢內[,]八兩四錢[,]
 五派契錢兼浮費去年至月下[,]
 無利⁽³⁾四兩三錢[,]羅州都有司⁽⁴⁾宅兩
 次去員路備去臘月下[,]無利四兩
 八錢九分[,]昨春金鎖齋會時浮
 費未頃條去臘月下[,]無利七兩[,]
 次小宗喪賻正月今下[,]無利三錢
 屯浦門會歸時浮費正月下[,]無利
 三錢泉洞門會去員浮費正月下[,]
 無利一錢四分本契番別役正月
 下[,]無利餘在錢三錢七分[,]

Source: Han`guk Chōngsin Munhwa Yōnguwōn Tosōgwan, microfilm 35-003213, *Haenam Yun-ssi Komunsō*, 2 *Yōnp`o Mungye ch`aek*, folio 3b-4a.

Translation:

`Nineteenth day of the eleventh month of 1846, the [following was] confirmed:

From the 1845 principal of 25 yang 7 chōn (25.7 yang), [the following expenditures were made:] 8 yang 4 chōn (8.4 yang) for the five branch clan associations' copper cash and travel expenses in the eleventh month of last year; a payment of 4 yang 3 chōn (4.3 yang) to a Najū accountant for travel expenses for two trips in the twelfth month [of 1845]; a payment of 4 yang 8 chon 9 pun (4.89 yang) for travel costs to the *Kūmswaejae* meeting (name of the clan association), last spring, [but] said cost had not yet been repaid as of the twelfth month [of 1845]; a payment of 7 yang for mourning expenses of the second collateral branch clan paid out in the first month of this [year]; a payment of 3 chōn (0.3 yang) for return travelling expenses from the Tunp`o [branch] clan meeting in the first month of this year; a payment of 3 chōn (0.3 yang) for travelling expenses to the Ch`ōndong [branch] clan meeting in the first month of this year; a payment of 1 chōn 4 pun (0.14 yang) for extra labour in the paddy lands of the

²²) (1) *kangsin* (講信) means a meeting to confirm the credit available, (2) *wōnchōn* (元錢) refers to the principal of a loan (modern term:), (3) *muri* (無利) is an interest-free loan, and (4) *yusa* is the bursar.

main clan association in the first month of this year; remaining are 3 *chŏn* 7 *pun* (0.37 *yang*).’

Another random sample from the same accounting period further reveals the single-entry style of the accounts.

合谷二十四石八斗內[.]正租四石十三斗[,]
 每石時值以二兩二錢例磨鍊錢爲
 十兩二錢三分[.]荒租十九石十五斗[,]
 每石時值以二兩例磨鍊錢爲三
 十九兩五錢[.]合錢四十九兩七錢三分[.]
 元錢合錢五十兩一錢內二兩二錢
 八分[.]本契畚未秧落漏條稅下二
 錢九分[.]-----

Source: Han`guk Chŏngsin Munhwa Yŏnguwŏn Tosŏgwan, microfilm 35-003213, *Haenam Yun-ssi Komunsŏ, 2 Yŏnp`o Mungye ch`aek*, folio 5b-6a.

Translation:

CHECK: `From a total of [unhulled] rice 24 *sŏk* 8 *tu*, traded unhulled rice 4 *sok* 13 *tu* at a [market] rate of 2.2 *yang* per *sŏk* to make 10 *yang* 2 *chŏn* 3 *pun*. [Traded] coarse, unhulled rice 19 *sŏk* 15 *tu* at a market rate of 2 *yang* per *sŏk* to make 39 *yang* 5 *chŏn*. Total copper cash 49 *yang* 7 *chŏn* 3 *pun*. From the total copper cash of 50 *yang* 1 *chŏn*, an expenditure of 2 *yang* 2 *chŏn* 8 *pun*. Write off the loss of transplants in the main [clan] association paddy land: 2 *chŏn* 9 *pun*.’

Both of these passages are examples of the HaenamYun clan account books from 1846. We can see that the transactions are recorded continuously, but there appears to be no comprehensive order in the form of the records. Perhaps, what we have is a daybook, but the page is too clean and the heading too suggestive of an accounting period for the record to be a daybook.

In comparison with the account books for the Nampyŏng Mun clan, there are clear differences. The Haenam Yun clan accounts show no headings under which terms are grouped, and there is no recognition of debit or credit indicated by indentations and word order. Critically, we cannot ascertain the correctness of the records, because the

HaenamYun clan account books do not allow us to check the accuracy of transaction entries.

This point will become clear if we consider errors. In the following sentence we can see how errors arise.

excerpt from Volume 3, line 1 original text:

十八石七斗每石以二月值二兩六錢五分例作錢錢爲五十八兩七錢二分

Source: *Yönp'o Mun kye ch'aek*

Translation:

'Traded 18 *sök* 7 *tu* at the market value in the second month of [1 *sök* =] 2 *yang* 6 *chön* 5 *pun*] yielding copper cash 58 *yang* 7 *chön* 2 *pun*.'

If we calculate a trade of 18 *sök* 7 *tu* at 1 *sök* = 2.65 *yang*, we do not get 58.72 *yang* but 48.63 *yang*. In order to obtain 58.72 *yang*, the price of 1 *sök* should have been 3.20 *yang*. In Table 12 we have examined such errors from 1846 to 1886. Over this period, the total number of records that mention a 'per market price' is 113, and the number of errors is thirteen, giving us an error ratio of approximately 12%.

Table 12 Error in the single-entry Haenam Yun clan account books
(*Yönp'o Mungye ch'aek*, vol. 3, 1846-1882)

line	sexagenary cycle	year	season	<i>sök</i> (a) (1 <i>sök</i> = 20 <i>tu</i>)	<i>tu</i> (b)	<i>sök</i> and <i>tu</i> / decimal <i>sök</i> (c)	total cash (d) <i>yang</i>	correctly calculated for 1 <i>sök</i> (e = total cash/ decimal <i>sök</i>)	actual record (f)	error (e - f)
1	辛亥	1851	spring	18	7.0	367.00 <i>tu</i> / 18.35 <i>sök</i>	58.72	3.20	2.65	0.55
2	壬子	1852	autumn	14	14.0	294.00/ 14.7 <i>sök</i>	47.50	3.23	3.30	-0.07
3	丁巳	1857	spring	4	8.3	88.30/ 4.415 <i>sök</i>	10.18	2.31	2.30	0.01
4	庚辰	1860	autumn	1	17.0	37.00/ 1.85 <i>sök</i>	6.08	3.29	3.50	-0.21
5	辛酉	1861	spring	2	3.0	43.00/ 2.15 <i>sök</i>	7.20	3.35	3.60	-0.25
6	辛酉	1861	spring	2	19.5	59.50/ 2.975 <i>sök</i>	10.69	3.59	3.60	-0.01
7	甲子	1864	spring	18	9.0	369.00/ 18.3 <i>sök</i>	80.14	4.34	4.30	0.04

8	丙寅	1866	spring	4	9.0	18.45 <i>sŏk</i> 89.00/ 4.45 <i>sŏk</i>	20.00	4.49	4.50	-0.01
9	丙寅	1866	spring	4	14.0	94.00/ 4.7 <i>sŏk</i>	22.00	4.68	4.70	-0.02
10	庚午	1870	spring	4	0.0	80.00/ 4 <i>sŏk</i>	27.28	6.82	4.40	2.42
11	庚午	1870	spring	7	12.0	152.00/ 7.6 <i>sŏk</i>	36.85	4.85	4.70	0.15
12	丙子	1876	spring	0	17.0	17.00/ 0.85 <i>sŏk</i>	3.82	4.49	4.50	-0.01
13	己卯	1879	spring	5		100.00/ 5 <i>sŏk</i>	10.50	2.10	2.70	-0.60
Error rate = 12% (13/113) [1846-1882] the number of error =13, the number of total records of 'per market price' = 113										

Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, *Haenam Yun-ssi komunsŏ*, Tosŏgwan microfilm no. 35-003213 (Volume 3).

The high rate of error in the Yun Clan accounts arises because the records were not kept in a double-entry fashion, so cross-referencing and error adjustment was not possible. We failed to find second entries for the transactions mentioned above. Accordingly, it is not surprising that errors arose. In contrast to the account books kept by the Yŏng'am Mun Clan, the Haenam Yun Clan account books yielded an error ratio 4.4 times as large as the Mun Clan account books. The probable reason for the low number of errors in the Mun clan accounts was because of their transparency or public accountability, but the Yun clan accounts were private, household accounts with no public accountability.

6. Private academies and the Yongsan Sŏwŏn accounts

Ch'oe Chillip (1568-1636) moved into the Ijo area near Kyŏngju shortly before the Japanese invasion began in 1592. He came from the Kyŏngju Ch'oe, a clan that had achieved some degree of nobility by the end of the Koryŏ dynasty in the late 1300s. His father had a house in Ijo and the clan owned farms nearby. Chillip and his brother distinguished themselves in the resistance against the Japanese and Chillip received two military appointments. His descendents split into five branches and the main branch established a shrine to the branch founder in 1699. In 1710, the king chartered the shrine by giving it a name, Sungyŏnsa, and the Yongsan Academy was founded with the shrine at its centre. The private academies or *sŏwŏn* appeared before Hideyoshi's invasion of Korea (1592-1598), but really came into their own in the seventeenth century. They were provincial institutions where local scholars gathered to celebrate in ritual the memory of a great scholar or loyalist and offer lectures to youth. The curriculum was based on reading, recitations, and commenting on the

Confucian classics. The Yongsan Academy never sent many men to central government, but by association with the Academy, the clan's status in local society was firmly established. It never became nationally famous such as the Tosan Academy or the Oksan Academy, and it remained a small economic enterprise compared to other academies. In 1871, it was closed when the Taewōngun (Regent) forced the closure of numerous lesser academies. The Yongsan Academy was a typical, small academy in late Chosŏn Korea. The documents that have survived are diverse and extensive. Classification began in 1993, and numerous documents were published in 2000 (Son 2000: 3-14).

Among the numerous documents on organisation and management we have left to us is the *Chŏnyŏgi* or a set of account books generally covering the years from 1701 to 1705 (Table 13).²³ Reporting periods were variable and short. As we can see from the sample in Table 14, the longest was about 90 days and the shortest about 4 days.

Table 14: Reporting periods in the extant accounts of the Yongsan Sŏwŏn

From	To	Number of days ^a	Signature of Bursar
1702.7.5	8.14	38	
8.14	9.15	31	
9.16	10.15	28	
10.15	12.15	30	
12.15	1763.1.15	28	
1703.1.15	2.15	30	
2.16	2.23	9	Signature
2.25	4.1	36	
4.1	6.15	72	Signature
6.15	7.8	23	
7.8	8.20	41	
8.20	9.1	11	
9.21	10.29	37	
10.29	12.16	16	
12.16	1764.1.6	19	
1704.1.6	2.21	44	
2.21	2.25	5	
2.26	3.30	34	
4.1	6.1	60	
6.2	8.10	68	
8.11	9.1	19	

²³ The dating given in the *Komunsŏ chipsŏng*, vol. 51 is 1761 to 1765, but by cross-referencing signatures in the accounts to records in the *Yongsan Sŏwŏn Kowang-rok*, we have determined the published dates to be off by one sixty-year cycle.

9.1	12.30	90	
1705.1.1	1.8	7	
1.8	2.3	25	

^{a)} Calculation is approximate, based on 30 days in a month.

Source: Hanguk Chǒngsin Munhwa Yǒnguwǒn, ed., *Komunsǒ chipsǒng*, vol. 51 (Collection of documents, vol. 51) (Sǒngnam: Hanguk chǒngsin munhwa yǒnguwǒn, 2000): 721-765.

The reporting periods followed no discernable pattern except the lunar cycle. The concern was obviously not focused on the agricultural cycle like the Mun clan and Yun clan accounts.

The ledger of the Yongsan Sǒwǒn has a similar sophisticated form as the Mun Clan accounts, but with small, subtle differences. These differences lead us to conclude that the Yongsan accounts bordered on being a closed, double-entry system, but failed to achieve that. Personification existed for a variety of goods. Each of the following carried the *chil* suffix: copper cash, milled rice, unhulled rice, soybeans, millet, red beans, wheat, and barley. In contrast to the Mun Clan accounts, unhulled rice carried the *chil* suffix in the Yongsan Sǒwǒn accounts, indicating that the unhulled ledger had no particular status over the other ledgers. This conclusion is also reinforced by the variable order of the accounts, more often beginning with copper cash or milled rice in any given accounting period. Consequently, it is difficult to identify a “cash” account. Also in contrast to the Mun Clan accounts, where we see a second entry for all transactions across ledgers, some transactions in the Yongsan accounts do not possess second entries. Table 15 is a sample of the year 1703 and shows that the principle of double-entry with real and nominal entries was at work, but the consistency is low. Nearly 30% of transactions cannot be traced to their origin (debit entries) or their destination (credit entries).

Table 15 Dual Entries in the Yongsan Academy Accounts for 1703

Line	Reporting Period and Ledger Name	Debit	Credit
2	1st month 15th day Unhulled Rice		4 <i>sǒk</i> 14 <i>tu</i> 5 <i>sǔng</i> milled into 2 <i>sǒk</i> 1 <i>tu</i> 5 <i>sǔng</i>
1	2nd month 16th day Milled Rice	2 <i>sǒk</i> 1 <i>tu</i> 5 <i>sǔng</i>	
5	1st month 15th day Unhulled Rice		1 <i>sǒk</i> 10 <i>tu</i> traded for copper cash 8 <i>yang</i>
4	2nd month 16th day Copper Cash	8 <i>yang</i>	

4	6th month 15th day Copper Cash		1 <i>chǒn</i> for milled rice 2 <i>sǔng</i>
1	6th 15th day Milled Rice	milled rice 2 <i>sǔng</i>	
5	6th month 15th day Copper Cash		5 <i>chǒn</i> for barley 3 <i>tu</i>
1	7th month 8th day Barley	3 <i>tu</i>	
3	7th month 8th day Barley		1 <i>sǒk</i> 1 <i>tu</i> for 1 <i>yang</i>
6	7th month 8th day Copper Cash	converted barley 1 <i>yang</i>	
1	7th month 8th day Wheat		7 <i>tu</i> 6 <i>sǔng</i> to copper cash 1 <i>yang</i>
7	7th month 8th day Copper Cash	converted wheat 1 <i>yang</i>	
3	10th month 29th day Unhulled Rice		22 <i>sǒk</i> 11 <i>tu</i> converted to copper cash 31.65 <i>yang</i>
1	9th month 21st day Copper Cash	22 <i>sǒk</i> 11 <i>tu</i> converted to copper cash 31.65 <i>yang</i>	

Source: Hanguk Chǒngsin Munhwa Yǒnguwǒn, ed., *Komunsǒ chipsǒng vol. 51* (Collection of documents, vol. 51) (Sǒngnam: Hanguk chǒngsin munhwa yǒnguwǒn, 2000): 733-752.

There was extensive use of indentation, and many of the technical terms discussed earlier appear (e.g. *i* instead of *nae* to indicate ‘total assets available’; *ha* to indicate ‘expenditure’; *kǒ* to indicate ‘outgoing’; and *chǒnsu* to indicate ‘balance carried down’). Nevertheless, the problems are multiple. The accuracy is suspect because many entries that should be cross-referenced to other parts of the general ledger lack a second entry. Personal accounts, transaction costs, and depreciation costs are absent. Conversion rates (e.g. how many *tu* of grain for one *yang* of copper cash) are also absent. As we argued above, explicit transaction costs and conversion rates indicate great attention to accuracy.

7. The maximisation of utility in a moral economy and concluding comments

Social and economic diagnosticians of European rationalism have often pointed to Italian bookkeeping or double-entry bookkeeping as one of the key components of commerce leading to capitalism. According to Werner Sombart, and Max Weber, double-entry accounting held pride of place in the “development of modern capitalism

in the West, and in the West alone” (Gardella 1992:317-319).²⁴ Max Weber famously linked capitalism, rationality, double-entry bookkeeping, and European society in his discussion of why capitalism did not arise in China. After a survey of the various cultural and institutional arrangements present in Europe but not in China, Weber comes back to the technologies of capitalism and concludes: “Finally, there was no genuine, technically valuable system of commercial correspondence, accounting, or bookkeeping [in China]” (Weber 1951:243). Weber refers to accounting in his *General Economic History* in a passage devoted to defining capitalism:

Capitalism is present wherever the industrial provision for the needs of a human group is carried out by the method of enterprise, irrespective of what need is involved. More specifically, a rational capitalistic establishment is one with capital accounting, that is, an establishment which determines its income yielding power by calculation according to the methods of modern bookkeeping and the striking of a balance (Weber 1927: 275).

This concept of capitalism does not address the “substantive rationality” that Weber addresses elsewhere in connection with his analysis of the “spirit” of capitalism (e.g. *The Protestant Ethic and the Spirit of Capitalism*). Rather, in *General Economic History*, Weber addresses the technology of capitalism, the “formal rationality” of how profit is pursued in institutional terms (Cohen 1981: xxx). He argues that the technology of capitalism has “capital accounting” at its base.

Basil Yamey speaks for a number of contemporary accounting historians when he asserts that the link between the double-entry method and capitalism has been exaggerated. He insists that the claims of predictive strength made on behalf of double-entry accounting are not valid. All accounting systems provide only information on past activities, and single entry may be as good as double entry. The

²⁴) Werner Sombart’s metaphysical interpretation of double-entry accounting was quite fanciful and evidently widespread. F. Braudel reports one of Sombart’s more expressive passages: “Double-entry book-keeping was born of the same spirit as the systems of Galileo and Newton, and the modern schools of physics and chemistry ... Without looking too closely one might already glimpse in double-entry book-keeping the ideas of gravitation, the circulation of the blood and energy conservation” (Braudel 1983:573). B.S. Yamey reminds us (Yamey 1964:118) that Oswald Spengler, in 1922, wrote: “The decisive event, however, was the invention ... of double-entry book-keeping by Fra Luca Pacioli in 1494. Goethe calls this in *Wilhelm Meister* ‘one of the finest discoveries of the human intellect,’ and indeed its author may without hesitation be ranked with his contemporaries Columbus and Copernicus” (Spengler 1928:490).

entrepreneurial spirit is inherently about forecasting and forecasts are made on the basis of *ad hoc* calculations. Double entry supplies an accurate accounting of the value of any commercial concern when its sale is on the table, but such accounting data offers no predictive strength, only at best a starting point for the kind of forecasting that is at the heart of entrepreneurial activity (Yamey 1964:130). It is obvious that sophisticated, rational accounting was and is efficient, but it is not obvious that the entrepreneurial risk associated with commercialism, even capitalism, depended on it. Fernand Braudel dismisses Weber's arguments about "substantive rationality" and the "spirit of capitalism" as arrived at by working backwards from the present to the past (Braudel 1983:567). He goes on to argue that Weber's "formal rational" elements, chief among them being double-entry accounting, were found in many non-capitalist settings, that they were not necessary for capitalism, and in fact, that capitalism itself was irrational: "a major element in capitalist development was risk-taking and a taste for speculation" (Braudel 1983:578).

To argue that capitalism was irrational may seem absurd, but it must be no more absurd than many of the arguments purporting to discover the lack of rationality in the non-West as an explanation for a late transition to capitalism and industrialisation. We agree with Jack Goody when he writes, "it seems unnecessary to ask whether particular cultures or even particular people are rational, but only whether they have developed or adopted specific forms of argument or cognitive procedure, such as the formal logic which has been a major focus of our attention" (Goody 1996: 42). This study has attempted to give historical evidence of cognitive procedures at work in eighteenth-century Korea.

We have not discussed bookkeeping in China or Japan, since others have provided us with good studies in English (Gardella 1992, Someya 1996, Nishikawa 1956, Nisikawa 1994, and Hsu 1991). R. Gardella mentions the *sizhufa* ("four columns system") as a sophisticated single-entry method: "the balance forwarded plus new receipts must equal outlays plus present balance" (Gardella 1992:324). Gardella goes on to discuss the *sanjiaozhang* ("three footed account") as "the first use of a double-entry recording principle in China" (Gardella 1992:324) from the late Ming and early Qing, but he provides only a brief description of the operation of the accounts.²⁵ He also outlines a more sophisticated double-entry method called the *longmenzhang*

²⁵ "Every transaction was recorded twice in 'incoming' (*lai*) and 'outgoing' (*qu*) categories on the upper and lower halves of the same account-book page. These incoming and outgoing categories were also designated as 'receipts' (*shou*) and 'payments' (*fu*)" (Gardella 1992:324).

(“dragon gate ledger”) and provides a photograph of what may be a sample from the early 1840s. The new method improved on older methods in nomenclature (“receipts”, “expenses”, “assets”, and “liabilities”), recorded entries in a dual offsetting manner in a bisected page format, and employed three types of books: “a journal for initial recording, a ledger or daily double-entry posting, and a ledger for categorizing accounts.”

At the end of the year, accounts subtracting expenses from income had to tally with that obtained by deducting liabilities from assets (on the grounds that assets plus expenses must equal liabilities plus income) (Gardella 1992:324).

If the photograph is an example of the *longmenzhang* style, it does show entries recorded in a “dual offsetting manner in a bisected page format”, but it does not show two entries on the same page for a single transaction. Perhaps cross-references were made between accounts such as illustrated above for the Mun clan and Yongsan Academy account books.

Hsu Tzu-fen has examined the account books of a Chinese firm operating in Nagasaki from 1858. The records date from 1901 to 1934 and reveal an indigenous double-entry method that Hsu refers to as the “receipt-payment bookkeeping method” after Guo Daonyang’s analysis of Qing bookkeeping methods.²⁶ Hsu compares the European “debit-credit system” with the Chinese “receipt-payment bookkeeping method” in the following:

Both systems are double classification bookkeeping, which means that the total amount of capital always equals the total amount of assets. If a capital account is either increased or decreased, an assets account is correspondingly increased or decreased. Thus two entries per transaction must be recorded in order to balance the account. The receipt-payment bookkeeping method is based upon the flow of money. If the entry makes the enterprise’s money increase, it is classified as an enterprise’s receipt and will be written in the receipt column. Conversely, if the entry makes the money decrease, it is classified as a payment of the enterprise and written in the payment column (Hsu 1991:1).

Hsu’s description requires two entries for each transaction, but the entries can be made

²⁶ Guo Daonyang, *Zhongguo kuaiji shigao* [A draft history of Chinese accounting], vol II. Beijing: Zhongguo caizheng jingji chubanshe, 1988, chapter 7-8; Hsu Tzu-fen, “Chōbo o tsujite mita Nagasaki kakyō bōekisho ‘Sheng-Tai Hao’ no katsudō” [The operations of the Nagasaki overseas Chinese firm ‘Sheng Tai’ as seen through account books]. *Shakai keizai shigaku* [Social and Economic History], 49:5.

in two different accounts. Again, this is the form encountered in the Mun clan accounts and the Yongsan Academy accounts.

K. Nishikawa asserts that exposure to Dutch accounting methods at Nagasaki did not lead to the adoption of double-entry in Japan, although the technique was actively taught at Dejima to Japanese students and Dutch books on accounting are to be found in the Nabeshima and Shizuoka collections (Nishikawa 1956:381). N. Nisikawa argues that there was no double-entry bookkeeping in Japan before the Meiji Restoration of 1868, but that there was “double calculation,” which, he argues, generally amounted to the same thing (Nisikawa 1994:192). K. Someya mentions the 1745 *daifukuchō* commercial ledger of the Nakai clan: “although not explicitly employing a two-sided reckoning of debits and credits, did use a double-entry type of bookkeeping approach” (Someya 1996:12). Nevertheless, in the same few pages Someya also writes of the entry of “Western-style double-entry notation” (Someya 1996:18) from the 1860s and 1870s as “the change from traditional diary-style bookkeeping methods to a modern system of accounting within a double-entry framework” (Someya 1996:11).

We can extract two general points from these comments. First, the statements about China and Japan seem to contain a number of qualifiers such as “principle” or “type” together with brief descriptions of methods, and we are rarely given detailed presentations of actual ledgers. Such treatment does not allow for ease of comparison; the researcher is left with the necessity of directly examining the original ledger before coming to a clear conclusion as to its character. We have offered detail in hopes of achieving greater comparative precision. Second, and more importantly, both the Chinese and Japanese cases examine mercantile organisations operating under the ethic of profit-loss. It is, of course, likelier that detailed accounting systems were used in commercial operations, because merchants have had a greater need for precise records, but commercial concerns were not the only economic actors in need of detailed ledgers that could be easily balanced. Since the most reliable and sophisticated accounts reviewed above came from the Mun clan association, we would like to focus our remaining comments on that organisation and suggest the significance of the non-commercial context.

Our discussion of the Mun Clan 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 relation between sophisticated accounting techniques and commercialism or capitalism. Efficient bookkeeping was undoubtedly a useful practice for commercial success, but it was also a useful practice within the

Korean moral economy. It was a technology that was applied in both cases precisely because it was rational and efficient.

Second, all three cases examined above put their primary purpose as mutual support, not profit. This might explain the absence of capital accounts and profit-loss accounts even in the Mun Clan accounts, the most sophisticated of the three. The goal was a guaranteed subsistence for all members of the clan 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 support expressions of social ideals, in particular the ideal of filial piety, then social stability took care of itself. Significant expenditures were made for projects that are best understood as ‘for the common material good,’²⁷ or for loans and expenditures that might be called a form of social welfare, even a redistribution of wealth, and were extended with the assumption of communal survival and reciprocity.²⁸ Reciprocity, gifts, and “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”. Avner Offer reminds us that Adam Smith stated the purpose of economic activity was “[t]o be observed, to be attended to, to be taken notice of with sympathy, complacency, and approbation”, or in other words, the pursuit of wealth beyond survival was the “pursuit of *regard*” (Offer 1997: 450-452). Material welfare, then, was not the sum total of human community.

In the Mun Clan accounts we should note numerous expenditures for ceremonies that directly related to the dominant social ideology of filial piety as a key pillar of social stability.²⁹ The performance of filial duties satisfied three needs. First was the need for personal emotional expression towards forebears. Second was the educational need towards younger generations of ritually expressing their duty to provide social welfare for the elderly, even the dead, and the third need was to attract community approval or to be regarded as a filial son, i.e., a trustworthy and upstanding member of

²⁷) For example, Table 1, line 15; Table 2, Spring 1793: Unhulled rice, lines 6-8; Milled rice, line 21; Copper cash, lines 8-11, 18; Autumn 1793: Barley, line 3; Spring 1794: Copper cash, lines 7-13; Table 5, Spring 1819: Unhulled rice, lines 3-7, 9-20, 28, 31, 34, 35, 39, and the categories of “Land Accounts, Dividends, and Labour for irrigation repairs” in Tables 6 and 7.

²⁸) For example, Table 2, Spring 1793: Unhulled rice, line 19; Milled rice, lines 4-6; Table 5, Spring 1819: Unhulled rice, lines 10-19, 22-24, and the category of “Students, education, charity, public buildings” in Tables 6 and 7.

²⁹) For example, Table 2, Spring 1793: Unhulled rice, lines 9-18; Milled rice, lines 10-19.

society. Confucian ideology in eighteenth-century Korea decried personal profit and enshrined community, and we find plentiful evidence in these ledgers of extensive economic commitment to this ideal.

The eighteenth-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 commitment to communal ideals.³⁰ Since the members of the association were consumers as well as producers, their ethics were radically different from commercial or capitalist concerns: they were risk-averse in their pursuit of subsistence and concerned with community surplus rather than personal surplus. In the words of James Scott, “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” (Scott 1976:4). To generate subsistence and then surplus required sophisticated technologies for monitoring corporate assets. If there was no efficient and honest oversight, the accounts became corrupted, 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. 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 the communal act of a shared, moral 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 Mun Clan had an equivalent to ‘audit ale’ called *chönyosi-chu*, and it appears in credit columns as: ‘audit wine’.

³⁰) Speculation would appear in the wider society in the nineteenth century, but that is another story related to shifting land use. See: S.H. Jun and J.B. Lewis, “A History of Rice Prices in Korea (1713-1933).” Working paper, Wolfson College, Oxford 2003.

Table 1: Original Text and Translation for 1741 Accounts

Line	(Grass writing converted to square-hand style)	All rice given as unhulled rice 租 [units: <i>tu</i> , <i>sŭng</i> , <i>hop</i>]	
1	辛酉十二月 日 捧上	1741.12 [start of the fiscal year]	
2	畚穀二石五斗	合二石七斗 留[庫]	[rent revenue] 2 <i>sŏk</i> 5 <i>tu</i> [45.00 <i>tu</i>] received from Mun Chaemin 2 <i>tu</i> [02.00 <i>tu</i>]
3	文在敏後入租二斗		
4	傳與有司文在敏	transferred from the bursar Mun Chaemin	
5	傳授有司文在綱	given to the bursar Mun Chaegyŏng	
6	別有司秩 (<i>pyŏl yusa chil</i>)	[Items] specially managed by the bursar (units: <i>yang</i> , <i>chŏn</i> , <i>pun</i>)	
7	文八成本十兩又八兩	[18 <i>yang</i>] [loaned to] Mun P'alsŏng: the principal of 10 <i>yang</i> , and an additional 8 <i>nyang</i>	
8	文在質本十兩	[10 <i>yang</i>] [loaned to] Mun Chaejil: the principal of 10 <i>yang</i>	
9	文在綱本十兩一錢七分	[10.17 <i>yang</i>] [loaned to] Mun Chaegyŏng: the principal of 10 <i>yang</i> 1 <i>chŏn</i> 7 <i>pun</i>	
10	文在敏本十兩	[10 <i>yang</i>] [loaned to] Mun Chaemin: the principal of 10 <i>yang</i>	
11	□□□山直二兩	[2 <i>yang</i>] [loaned to] grave-keeper: [the principal of] 2 <i>yang</i>	
12	留庫租二石七斗	remaining in the storehouse: 2 <i>sŏk</i> 7 <i>tu</i> [47.00 <i>tu</i>]	
13	二斗種子下	小房處	[for the] Sobang [land]
14	二斗所耕 ³¹ 下		
15	八斗辛酉春祭需進下	[8.00 <i>tu</i>] 8 <i>tu</i> for things needed in the spring sacrificial service	
16	一石十五斗作錢二兩六錢每兩置本有司每兩利三	[35.00 <i>tu</i>] 1 <i>sŏk</i> 15 <i>tu</i> traded for copper 2 <i>yang</i> 6 <i>chŏn</i> , loaned to the bursar at 30% interest per annum per <i>yang</i>	
17	四升縮下	[0.40 <i>tu</i>] 4 <i>sŭng</i> depreciation	
	[Total 47 <i>tu</i>]	[47.40 <i>tu</i> total]	[error = 0.40]

NB: 1 *sŏk* = 20 *tu*

Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21 (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 576-577.

³¹) *sogyŏng*. The meaning of this term is not yet clear. Pak Pyŏngho argues that this term refers to taxation, although the usual tax indicators referred to land area (Pak Pyŏngho 1999:54, 313-4). 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 here and continually throughout the accounts for the Mun clan, the term seems to refer to expenditures for labour (oxen and plowing to prepare the land and lay seed) and may have included a tax subsidy. In the accounts for the collateral clan, we can see *sogyŏng* and seed costs as separate items, but listed side-by-side.

Illustration 2

Spring 1793 Mun clan ledger

Unhulled rice (春租秩), Milled rice (米秩), and the beginning of Copper cash (錢秩)

Source: Hanguk Chöngsin Munhwa Yönguwön, ed., *Komunsö chipsöng vol. 21* (Collection of documents, vol. 21) (Söngnam: Hanguk chöngsin munhwa yönguwön, 1996): 638.



Table 2: Translation for 1793-1795 Mun Head Clan Accounts (*Yonghagi*)

[Recording period is spring,] 1793:

[Unhulled Rice (租)]

Line	Debit	Credit
1	Carry down (傳受) unhulled rice 42 <i>sök</i> 1 <i>tu</i> [841 <i>tu</i>]; from this (內) , [the following expenditures were made]	
2		2 <i>sök</i> 12 <i>tu</i> [52 <i>tu</i>] for the starving ^{a)}
3		11 <i>tu</i> 4 <i>süng</i> [11.4 <i>tu</i>] to Hyo[che]pyöng paddy land for half tillage cost (半所耕) ^{b)}
4		9 <i>tu</i> to Chöndong paddy land for half tillage cost (半所耕) ^{b)}
5		14 <i>tu</i> 6 <i>süng</i> [14.6 <i>tu</i>] to Ch`otap paddy land for half tillage cost (半所耕) ^{b)}
6		10 <i>tu</i> for foodstuffs for labour to construct a house for the gravekeeper ^{c)}
7		8 <i>tu</i> for So`t`o paddy land to feed labour for irrigation repairs ^{c)}
8		3 <i>tu</i> for Hangdong paddy land to feed labour for irrigation repairs ^{c)}
9		5 <i>tu</i> for Mun Yongdök's memorial rite for his fifth-generation female ancestor on his father's side, 5.11 ^{d)}
10		5 <i>tu</i> for Mun Ch`an`gang's memorial rite for his grandmother on his father's side, 5.14
11		5 <i>tu</i> for Mun Ch`an`gang's memorial rite for his grandfather on his father's side, 5.21
12		5 <i>tu</i> for Mun Chebong's memorial rite for his father, 5.29
13		5 <i>tu</i> for Mun Ch`anjung's memorial rite for his grandmother on his father's side, 6.3
14		5 <i>tu</i> for Mun Ch`anjung's memorial rite for his grandfather on his father's side, 6.9
15		5 <i>tu</i> for Mun Yongdök's memorial rite for his great-great grandmother on his father's side, 6.21
16		5 <i>tu</i> for Mun Chesul's memorial rite for his father, 6.23
17		5 <i>tu</i> for Mun Chesul's memorial rite for his mother, 4.16
18		5 <i>tu</i> for Mun Chungt`aek's memorial rite for his great-great grandmother on his father's side, 6.20
19		5 <i>sök</i> 6 <i>tu</i> [106 <i>tu</i>] for distribution to all members
20		8 <i>tu</i> for the warehouse keeper to distribute
21		15 <i>sök</i> 19 <i>tu</i> 2 <i>süng</i> [319.2 <i>tu</i>] traded for copper cash 58 <i>yang</i> 1 <i>chön</i> [at the exchange rate of 1 <i>sök</i>] for 3 <i>yang</i> 7 <i>chön</i> [ERROR: should be 3.64 <i>yang</i> , not 3.7]
22		10 <i>sök</i> 10 <i>tu</i> [210 <i>tu</i>] into milled rice 84 <i>tu</i> [at the exchange rate of 2.5 <i>tu</i> of unhulled rice for 1 <i>tu</i> of milled rice or a return of 40%]
23		1 <i>sök</i> 19 <i>tu</i> 8 <i>süng</i> [39.8 <i>tu</i>] depreciation (縮)
[Total]	[841 <i>tu</i>]	[841 <i>tu</i>]

NB: units are *sök* (石), *tu* (斗), *süng* (升), and *hop* (合) with *sök* : *tu* : *süng* : *hop* ratios at 1 : 20 : 10 : 10.

^{a)} The previous year's harvest must have been bad, and some of the membership were suffering from a shortage of food.

^{b)} "Pan *sogyöng*" and "sogyöng." "Pan *sogyöng*" means "half *sogyöng*," but the meaning of the term "sogyöng" is not yet clear. Pak Pyöngho argues that this term refers to taxation, although the usual tax indicators referred to land

area (Pak Pyōngho 1999:54, 313-4). 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 here in credits and continually throughout the accounts for the Mun clan as a credit, the term seems to refer to expenditures for labour (oxen and plowing to prepare the land and lay seed) and may have included a tax subsidy. In the accounts for the collateral clan, we can see *soгыōng* and seed costs as separate items, but listed side-by-side. This sort of item was quite common in initial payments from the unhulled ledger. Here, it probably indicated a payment of half of the usual cost of *soгыōng*. Presumably, the tenant was responsible for the remaining half.

^{c)} Labour costs.

^{d)} Indicates the date of the ceremony (5th month, 11th day).

Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 638.

Milled Rice Ledger (米秩)

Line	Debit	Credit
1	Carry down (傳受) 1 <i>tu</i>	
2	From unhulled rice 84 <i>tu</i>	
3	total 85 <i>tu</i> ; from this (內), [the following expenditures were made]	
4		2 <i>sūng</i> [0.2 <i>tu</i>] for provisions for the illness of the Chesan dependents
5		2 <i>sūng</i> [0.2 <i>tu</i>] for provisions for the illness of the Yongsūng dependents
6		7 <i>sūng</i> [0.7 <i>tu</i>] for provisions for the illness of the Sōkdong dependents
7		2 <i>tu</i> , wine for graveside labour ^{a)}
8		3 <i>tu</i> 4 <i>sūng</i> [3.4 <i>tu</i>] lunch for same ^{a)}
9		2 <i>sūng</i> [0.2 <i>tu</i>] for convalescence of the dependent Sōkdong widow in Mudōk-jang [pavilion]
10		2 <i>tu</i> for Yi Yang'uk's memorial rite for his grandmother on his mother's side, 5.12
11		2 <i>tu</i> for Mun Ch'anho's memorial rite for his grandmother on his father's side, 3.16
12		2 <i>tu</i> for Mun Cha'nho's memorial rite for his grandfather on his father's side, 6.20
13		2 <i>tu</i> for Yi Yang'uk's memorial rite for his grandfather on his mother's side, 7.14
14		4 <i>tu</i> for Yi Yang'uk's graveside ^{c)} memorial rites for his great grandfather and great grandmother on his mother's side, [no date given]
15		2 <i>tu</i> for Mun Chehūi's memorial rite for his father, 8.19
16		4 <i>tu</i> for Mun Chungt'aek's graveside memorial rites for his great-great-great grandfather and grandmother, [no date given]
17		4 <i>tu</i> for Mun Chebong's graveside memorial rites for his great grandfather and grandmother, [no date given]
18		4 <i>tu</i> for Mun Sit'aek's graveside memorial rites for his fifth-generation grandfather and grandmother, [no date given]
19		4 <i>tu</i> for Mun Yongdōk's graveside memorial rite for his sixth-generation grandfather and grandmother, [no date given]

20		8 <i>tu</i> for the Ch'ambong-gong and graveside memorial rites, [no date given]
21		4 <i>tu</i> for rites for the mountain god, [no date given]
22		8 <i>tu</i> for Mun Sangt'aek's graveside memorial rites for his sixth-generation grandfather and grandmother, [no date given]
23		8 <i>tu</i> for Mun Sit'aek's graveside memorial rites for his sixth-generation grandfather and grandmother, [no date given]
24		2 <i>tu</i> for Mun Chebong's memorial rite for his great-great grandmother, 8.19
25		2 <i>tu</i> for Mun Chebong's memorial rite for his great-great grandfather, 10.16
26		2 <i>tu</i> for Mun Chebong's memorial rite for his great grandmother, 10.19
27		2 <i>tu</i> for Mun Sit'aek's graveside memorial rite for his sixth-generation grandmother, 9.25
28		2 <i>tu</i> for Mun Sit'aek's memorial rite for his fifth-generation grandmother, 10.6
29		2 <i>tu</i> for Mun Sit'aek's memorial rite for his great-great grandmother, 9.17
30		2 <i>tu</i> for Mun Sit'aek's memorial rite for his great grandmother, 9.24
31		2 <i>tu</i> for Mun Yongdök's memorial rite for his sixth-generation grandfather, 10.29
32		2 <i>tu</i> for Mun Chehüi's memorial rite for his mother, 10.16
33		2 <i>tu</i> for Mun Chebong's memorial rite for his grandfather, 9.20
34		3 <i>süng</i> [0.3 <i>tu</i>] depreciation (縮) ^{b)}
35		85 <i>tu</i> all consumed
[Total]	[85 <i>tu</i>]	[85 <i>tu</i>]

NB: units are *sök* (石), *tu* (斗), *süng* (升), and *hop* (合) with *sök* : *tu* : *süng* : *hop* ratios at 1 : 20 : 10 : 10.

a) Indicates labour costs.

b) Indicates implicit transaction costs and allows flexibility.

Source: Hanguk Chöngsin Munhwa Yönguwön, ed., *Komunsö chipsöng*, vol. 21 (Collection of documents, vol. 21)

(Söngnam: Hanguk chöngsin munhwa yönguwön, 1995): 638.

c) Only graveside rites are indicated. All other rites were held at home.

Copper Cash Ledger (錢秩)

Line	Debit	Credit
1	Carry down (傳受) 39 <i>yang</i> 9 <i>chön</i> 6 <i>pun</i> [39.96 <i>yang</i>]	
2	From unhulled rice 58 <i>yang</i> 1 <i>chön</i> [58.1 <i>yang</i>]	
3	From yeastcake sales 4 <i>yang</i> 4 <i>chön</i> 6 <i>pun</i> [4.46 <i>yang</i>] [ERROR: reported amount in Yeastcake Ledger is 4.66 <i>yang</i> .]	
4	total 102 <i>yang</i> 5 <i>chön</i> 2 <i>pun</i> [102.52 <i>yang</i>]; from this (內) , [the following expenditures were made]	

5		37 yang for purchase of 3 turak ^{a)} of paddy land in Hang-dong
6		2 chŏn [0.2 yang] for the cost of [paper] to write [the deed] for the same
7		7 yang for purchase of 1 turak ^{a)} of paddy land in Sang-dong
8		3 yang 1 chŏn [3.1 yang] for purchase of a lot to build a house for the gravekeeper
9		1 yang 5 chŏn [1.5 yang] for cost of lumber [for same]
10		9 chŏn 8 pun [0.98 yang] for tobacco and side dishes for lunch [for labourers] ^{b)}
11		1 yang 1 chŏn [1.1 yang] for side dishes [for labourers] ^{b)}
12		2 yang traded for barley
13		2 chŏn [0.2 yang] for Mun Sangt'aek's memorial rite for his fifth-generation grandfather, 5.15
14		2 chŏn [0.2 yang] for wine to distribute
15		3 yang for the Ch'ambong-kong graveside memorial rites
16		1 yang 5 chŏn [1.5 yang] for Mun Sit'aek's graveside memorial rite for his sixth-generation grand[father], [no date given]
17		1 yang 5 chŏn [1.5 yang] for Mun Sangt'aek's graveside memorial rite for his sixth-generation grand[father], [no date given]
18		1 yang for rites for the mountain god, [no date given]
19		2 chŏn [0.2 yang] for Mun Chebong's memorial rite for his great-great grandmother, 8.21
20		2 chŏn [0.2 yang] for Mun Chebong's memorial rite for his great-great grandfather, 10.19
21		2 chŏn [0.2 yang] for Mun Chebong's memorial rite for his grandmother, 10.19
22		2 chŏn [0.2 yang] for Mun Sit'aek's memorial rite for his sixth-generation grandmother, 9.25
23		2 chŏn [0.2 yang] for Mun Sit'aek's memorial rite for his fifth-generation grandmother, 10.6
24		2 chŏn [0.2 yang] for Mun Yongdök's memorial rite for his sixth-generation grandfather, 10.29
25		1 yang for Mun Chŏnjök's traveling expenses
26		64 yang 4 chŏn 8 pun [64.48 yang] spent [ERROR: addition of credits is 62 yang 4 chŏn 8 pun (62.48 yang)]
27		39 yang 4 pun [39.04 yang] remaining [ERROR: 38.04 yang is left from 102.52 – 64.48]
[Total]	[102 yang 5 chŏn 2 pun (102.52 yang)]	[103 yang 5 chŏn 2 pun (103.52 yang)]

NB: units are yang (兩), chŏn (錢), and ip (立) or pun (分) with yang : chŏn : ip (pun) ratio at 1 : 10 : 10.

^{a)} During the Chosŏn period, land was measured in three ways. The first was the measurement of land based on the area of seeding (播種量). The units were the *sŭngnak* (升落), the *turak* (斗落), and the *sŏngnak* (石落). This type of measurement was commonly used to measure paddy fields. The land was measured by how much seed grain was required. Each ascending amount of seed grain could seed a larger and larger area of paddy land. The second measurement was based on the tillage time required, and the units were the *ilgyŏng* (日耕 or “full day”) and *ban-ilgyŏng* (半日耕 “half day”). Dry fields were measured in this way. The area was measured as to whether it took a man with an ox a full day or half a day to till. The third measure was based on the size of the harvest (*suhangnyang* 收穫量). In this case, the units were *kyŏl* (結), *bu* (負), *sok* (束), and *p'a* (把), and the system is commonly called the *kyŏlbu* system. Measuring land by the amount of seed grain (播種量) and tillage time presents us with an

absolute area, but measuring land by the amount of harvest (收穫量) presents us with relative areas, because harvest differs in accordance with the fertility of land and the climatic conditions.

Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 639.

b) Labour cost.

[Recording period is autumn, 1793]:

Autumn Rent from Association Land (秋捧)

Line	Debit	Credit
1	Paddy rice 42 <i>sōk</i> 4 <i>tu</i> [844 <i>tu</i>]; from this (內) , [the following expenditures were made]	
2		1 <i>sōk</i> [20 <i>tu</i>] as yet unpaid by the Hwasan household; in autumn of 1798, repaid by the Hwasan household
3	Actual holdings 41 <i>sōk</i> 4 <i>tu</i> [824 <i>tu</i>]	
4	[Included] for ancestral ritual necessities 6 <i>sōk</i> [120 <i>tu</i>]	
5	For warehouse keeper to distribute [for provisions] 8 <i>tu</i> [8 <i>tu</i>]	
6	Total 47 <i>sōk</i> 12 <i>tu</i> [952 <i>tu</i>]; from this (內) , [the following expenditures were made]	
7		5 <i>tu</i> for Mun Sit' aek's memorial rite for his fifth-generation grandfather, 12.7
8		5 <i>tu</i> for Mun Kyōngt' aek's memorial rite for his great grandmother, 11.26
9		6 <i>tu</i> for Mun Sangt' aek's tea ceremony for his sixth- and fifth-generation ancestors
10		5 <i>tu</i> for Mun Sangt' aek's memorial rite for his great grandmother, 11.8
11		1 <i>sōk</i> [20 <i>tu</i>] into milled rice 8 <i>tu</i> at the conversion rate of 8 <i>tu</i> per <i>sōk</i> [of unhulled rice]
12		5 <i>tu</i> for Mun Sangt' aek's memorial rite for his great grandmother, 11.22
13		5 <i>tu</i> for Mun Chebong's memorial rite for his grandfather, 5.19
14		4 <i>tu</i> to purchase barley 3 <i>tu</i>
15		5 <i>tu</i> for the cost of changing roof thatching
16		2 <i>sōk</i> [60 <i>tu</i>] subtotal of expenditures
17		44 <i>sōk</i> 12 <i>tu</i> [892 <i>tu</i>] remaining
[Total]	[952 <i>tu</i>]	[952 <i>tu</i>]

NB: units are *sōk* (石), *tu* (斗), *sūng* (升), and *hop* (合) with *sōk* : *tu* : *sūng* : *hop* ratios at 1 : 20 : 10 : 10.

Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 639.

Milled Rice Ledger (米秩)

Line	Debit	Credit
1	From unhulled [rent] rice 8 <i>tu</i> ; from this (內), [the following expenditures were made]	
2		2 <i>tu</i> for Mun Chungt'aek's memorial rite for his great-great grandmother, 6.20
3		4 <i>tu</i> 9 <i>sŭng</i> for a lawsuit over a grave site ^{a)}
4		1 <i>tu</i> for [Ch'usök or harvest moon festival] grave visit
5		1 <i>sŭng</i> for [soup] stock or extract
6		8 <i>tu</i> subtotal of expenditures
[Total]	[8 <i>tu</i>]	[8 <i>tu</i>]

NB: units are *sök* (石), *tu* (斗), *sŭng* (升), and *hop* (合) with *sök* : *tu* : *sŭng* : *hop* ratios at 1 : 20 : 10 : 10.

^{a)} These might involve desecration or appeals for access to land to construct a grave.

Source: Hanguk Chöngsin Munhwa Yönguwön, ed., *Komunsö chipsöng*, vol. 21 (Collection of documents, vol. 21)

(Söngnam: Hanguk chöngsin munhwa yönguwön, 1995): 639.

Copper Cash Ledger (錢秩)

Line	Debit	Credit
1	Remaining copper cash (留錢) 41 <i>yang</i> 4 <i>pun</i> [41.04 <i>yang</i>] ^{b)} ; from this (內), [the following expenditures were made]	
2		8 <i>yang</i> 8 <i>chön</i> 6 <i>pun</i> [8.86 <i>yang</i>] for lawsuit over a grave site ^{c)}
3		2 <i>chön</i> [0.2 <i>yang</i>] for Mun Sit'aek's memorial rite for his fifth-generation grandfather, 12.1
4		4 <i>chön</i> 6 <i>pun</i> [0.46 <i>yang</i>] for octopus
5		1 <i>chön</i> [0.1 <i>yang</i>] for oysters
6		1 <i>chön</i> 4 <i>pun</i> [0.14 <i>yang</i>] for salted fish
7		30 <i>yang</i> for purchase of 2 <i>turak</i> ^{a)} of paddy land in Tundök- yang
8		39 <i>yang</i> 7 <i>chön</i> 6 <i>pun</i> [39.76 <i>yang</i>] subtotal of expenditures
9		1 <i>yang</i> 2 <i>chön</i> 7 <i>pun</i> [1.27 <i>yang</i>] remaining
[Total]	[41.04 <i>yang</i>]	[41.03 <i>yang</i> ERROR]

NB: units are *yang* (兩), *chön* (錢), and *ip* (立) or *pun* (分) with *yang* : *chön* : *ip* (*pun*) ratio at 1 : 10 : 10.

^{a)} See note ^{a)} at top under Copper Cash Ledger.

^{b)} Probably, sometime between spring and autumn of 1793, an error was detected in the copper cash account, and 2 *yang* was added in the carry down amount from spring to autumn to correct the error. Hence the difference between 39.04 *yang* and 41.04 *yang* is 2 *yang*.

^{c)} These might involve desecration or appeals for access to land to construct a grave.

Source: Hanguk Chöngsin Munhwa Yönguwön, ed., *Komunsö chipsöng*, vol. 21 (Collection of documents, vol. 21)

(Söngnam: Hanguk chöngsin munhwa yönguwön, 1995): 639-640.

Barley Ledger (木麥秩)

Line	Debit		Credit
1	Carry down (傳受) 3 tu	Total 6 tu; from this (內) , [the following expenditures were made]	
2	3 tu newly supplied		
3			3 tu for the Ch'ambong-kong ^{a)} and ancestral rituals for graves up and down the hillside
4			3 tu remaining
[Total]	[6 tu]		[6 tu]

NB: units are *sök* (石), *tu* (斗), *süng* (升), and *hop* (合) with *sök* : *tu* : *süng* : *hop* ratios at 1 : 20 : 10 : 10.

^{a)} Government official, lower 9th.

Source: Hanguk Chöngsin Munhwa Yönguwön, ed., *Komunsö chipsöng*, vol. 21 (Collection of documents, vol. 21)

(Söngnam: Hanguk chöngsin munhwa yönguwön, 1995): 640.

Yeastcake Ledger (曲子秩)

Line	Debit		Credit
1	Carry down (傳受) 42 yeastcakes	total 64 yeastcakes; from this (內) , [the following expenditures were made]	
2	newly supplied 22 yeastcakes		
3			1 yeastcake for [Ch'usök or autumn harvest] visits to graves
4			2 yeastcakes for graveside labour ^{a)}
5			40 yeastcakes sold for 4 yang 6 chön 6 pun [4.66 yang]
6			43 yeastcakes subtotal
7			21 yeastcakes remaining
[Total]	[64 yeastcakes]		[64 yeastcakes]

Source: Source: Hanguk Chöngsin Munhwa Yönguwön, ed., *Komunsö chipsöng*, vol. 21 (Collection of documents, vol. 21) (Söngnam: Hanguk chöngsin munhwa yönguwön, 1995): 640.

^{a)} Indicates labour costs.

Chairman of the Association (門長) [no signature]

Auditor (公事員) [no signature]

[Recording period is spring,] 1794:

[Unhulled Rice Ledger (租)]

Line	Debit		Credit
1	Carry down (傳受) unhulled rice 44 sök 12 tu	[892 tu]; from this (內) , [the following expenditures were made]	
25			11 tu 4 süng to Hyo[che]pyöng paddy land for half tillage cost (半所耕) ^{a)} [transferred] to Kyesön's [personal account]

3		----
28		25 <i>sŏk</i> [500 <i>tu</i>] traded for copper cash 40 <i>yang</i> [at the exchange rate of 1 <i>sŏk</i>] for 1 <i>yang</i> 6 <i>chŏn</i>
29		4 <i>sŏk</i> [80 <i>tu</i>] into milled rice 32 <i>tu</i> [at the exchange rate of 2.5 <i>tu</i> of unhulled rice for 1 <i>tu</i> of milled rice or a return of 40%]
30		2 <i>sŏk</i> [40 <i>tu</i>] into milled rice 16 <i>tu</i> [at the exchange rate of 2.5 <i>tu</i> of unhulled rice for 1 <i>tu</i> of milled rice or a return of 40%]
31		4 <i>sŏk</i> 5 <i>tu</i> [85 <i>tu</i>] traded for copper cash 6 <i>yang</i> 8 <i>chŏn</i> [6.8 <i>yang</i>] [at the exchange rate of 1 <i>sŏk</i>] for 1 <i>yang</i> 6 <i>chŏn</i>
32		1 <i>sŏk</i> 16 <i>tu</i> 4 <i>sŭng</i> [36.4 <i>tu</i>] depreciation (縮)
33		44 <i>sŏk</i> 12 <i>tu</i> [892 <i>tu</i>] total expenditures
[Total]	[892 <i>tu</i>]	[892 <i>tu</i>]

NB: units are *sŏk* (石), *tu* (斗), *sŭng* (升), and *hop* (合) with *sŏk* : *tu* : *sŭng* : *hop* ratios at 1 : 20 : 10 : 10.

^{a)} See note ^{b)} at top under Unhulled Rice Ledger.

Source: Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21 (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 640.

Milled Rice Ledger (米秩)

Line	Debit	Credit
1	From unhulled rice 48 <i>tu</i> from this (內) , [the following expenditures were made]	
2		----
3		----
7		13 <i>tu</i> subtotal of expenditures
8		35 <i>tu</i> remaining
[Total]	[48 <i>tu</i>]	[48 <i>tu</i>]

NB: units are *sŏk* (石), *tu* (斗), *sŭng* (升), and *hop* (合) with *sŏk* : *tu* : *sŭng* : *hop* ratios at 1 : 20 : 10 : 10.

Source: Source: Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21 (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 640-641.

Copper Cash Ledger (鐵秩)

Line	Debit	Credit
1	Carry down (傳受) 1 <i>yang</i> 2 <i>chŏn</i> 8 <i>pun</i> [1.27 <i>yang</i>]	
2	From unhulled rice 46 <i>yang</i> 8 <i>chŏn</i> [46.8 <i>yang</i>]	
3	From yeastcake sales 2 <i>yang</i>	
4	50 <i>yang</i> 8 <i>pun</i> [50.07 <i>yang</i>] total; from this (內) , [the following expenditures were made]	
5		----
7		2 <i>yang</i> 6 <i>chŏn</i> for side dishes
8		3 <i>chŏn</i> 9 <i>pun</i> for rock fish
9		1 <i>chŏn</i> 2 <i>pun</i> for soy dishes
10		5 <i>pun</i> for water parsley
11		4 <i>pun</i> for garlic
12		1 <i>chŏn</i> 8 <i>pun</i> for tobacco

graveside labour^{b)}

[These entries are all brought from a day-book as indicated by markings in the ledger.]

13		5 <i>pun</i> for salt	
15		24 <i>yang</i> for purchase of 2 <i>turak</i> ^a of paddy land in So`t`o and Hyo[che]	
16		3 <i>chôn</i> [0.3 <i>yang</i>] for the cost of [paper] to write [the deed] for the same	
21		36 <i>yang</i> 4 <i>chôn</i> 3 <i>pun</i> [36.43 <i>yang</i>] spent	
22		13 <i>yang</i> 6 <i>chôn</i> 5 <i>pun</i> [13.64 <i>yang</i>] remaining	
[Total]	[50.07 <i>yang</i>]	[50.07 <i>yang</i>]	

NB: units are *yang* (兩), *chôn* (錢), and *ip* (立) or *pun* (分) with *yang* : *chôn* : *ip* (*pun*) ratio at 1 : 10 : 10.

a) See note a) at top under Copper Cash Ledger.

b) Expenditure for labour costs.

Source: Source: Source: Hanguk Chôngsin Munhwa Yônguwôn, ed., *Komunsô chipsông*, vol. 21 (Collection of documents, vol. 21) (Sôngnam: Hanguk chôngsin munhwa yônguwôn, 1995): 641.

[Recording period is autumn, 1794]:

Autumn Rent from Association Land (秋捧)

Line	Debit	Credit	
1	Paddy rice 27 <i>sôk</i> 18 <i>tu</i> [558 <i>tu</i>]		
2		14 <i>tu</i> 3 <i>süng</i> [14.3 <i>tu</i>] Kim Tök`ung	unpaid loans
3		6 <i>tu</i> 2 <i>süng</i> [6.2 <i>tu</i>] Kim Chadük	
4	Actual holdings 26 <i>sôk</i> 17 <i>tu</i> 5 <i>süng</i> [537.5 <i>tu</i>]		
5	[Included] for ancestral ritual necessities 3 [60 <i>tu</i>] <i>sôk</i>		
6	Total 29 <i>sôk</i> 17 <i>tu</i> 5 <i>süng</i> [597.5 <i>tu</i>]; from this (內) , [the following expenditures were made]		
7		----	
8		----	
13		2 <i>sôk</i> 17 <i>tu</i> [57 <i>tu</i>] subtotal of expenditures	
14		27 <i>sôk</i> 5 <i>süng</i> [540.5 <i>tu</i>] remaining	
[Total]	[597.5 <i>tu</i>]	[597.5 <i>tu</i>]	

NB: units are *sôk* (石), *tu* (斗), *süng* (升), and *hop* (合) with *sôk* : *tu* : *süng* : *hop* ratios at 1 : 20 : 10 : 10.

Source: Source: Source: Hanguk Chôngsin Munhwa Yônguwôn, ed., *Komunsô chipsông*, vol. 21 (Collection of documents, vol. 21) (Sôngnam: Hanguk chôngsin munhwa yônguwôn, 1995): 641.

Milled Rice Ledger (米秩)

Line	Debit	Credit	
1	Remaining milled rice (留米) 35 <i>tu</i> ; from this (內) , [the following expenditures were made]		
2		----	
3		----	
17		34 <i>tu</i> 6 <i>süng</i> [34.6 <i>tu</i>] subtotal of expenditures	
18		4 <i>süng</i> [0.4 <i>tu</i>] remaining	
[Total]	[35 <i>tu</i>]	[35 <i>tu</i>]	

NB: units are *sôk* (石), *tu* (斗), *süng* (升), and *hop* (合) with *sôk* : *tu* : *süng* : *hop* ratios at 1 : 20 : 10 : 10.

Source: Source: Source: Hanguk Chôngsin Munhwa Yônguwôn, ed., *Komunsô chipsông*, vol. 21 (Collection of

documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 641.

Copper Cash Ledger (錢秩)

Line	Debit	Credit
1	Remaining copper cash (留錢) 13 yang 6 chŏn 4 pun [13.64 yang]	
2		----
3		----
8		1 yang 2 chŏn [1.2 yang] subtotal of expenditures
9		12 yang 4 chŏn [12.4 yang] remaining [ERROR: should be 12.44 yang]
[Total]	[13.64 yang]	[13. 60 yang ERROR]

NB: units are yang (兩), chŏn (錢), and ip (立) or pun (分) with yang : chŏn : ip (pun) ratio at 1 : 10 : 10.

Source: Source: Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21 (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 642.

Barley Ledger (木麥秩)

Line	Debit	Credit
1	Carry down (傳受) 3 tu; from this (內), [the following expenditures were made]	
2		----
5		2 tu subtotal expenditures
6		1 tu remaining
[Total]	[3 tu]	[3 tu]

NB: units are sŏk (石), tu (斗), sŭng (升), and hop (合) with sŏk : tu : sŭng : hop ratios at 1 : 20 : 10 : 10.

Source: Source: Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21 (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 642.

Yeastcake Ledger (曲子秩)

Line	Debit	Credit
1	Carry down (傳受) 21 yeastcakes; from this (內), [the following expenditures were made]	
2		10 yeastcakes sold for copper cash 2 yang
3		3 yeastcakes for graveside labour ^{a)}
4		13 yeastcakes subtotal expenditure
5		8 yeastcakes remaining
[Total]	[21 yeastcakes]	[21 yeastcakes]

Source: Source: Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21 (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 642.

^{a)} Expenditure for labour costs.

Chairman of the Association (門長) [no signature]

Auditor (公事員) [no signature]

[Recording period is spring], 1795:

[Unhulled Rice (租)]

Line	Debit	Credit
1	Carry down (傳受) unhulled rice 27 <i>sōk</i> [540 <i>tu</i>] ^{c)} ; from this (內) , [the following expenditures were made]	
2		15 <i>tu</i> for the starving ^{a)}
26		2 <i>sōk</i> 6 <i>tu</i> [46 <i>tu</i>] for each member; allocated in three rounds to the starving
27		13 <i>tu</i> to Taech`o paddy land for half tillage cost (半所耕) ^{b)} [transferred to personal ledger for] ??????
28		12 <i>tu</i> to Hyo[che and] Ch'on[jōn] paddy land for half tillage cost (半所耕) ^{b)} [transferred to personal ledger for] Kyesōn
30		1 <i>sōk</i> 5 <i>tu</i> [25 <i>tu</i>] [traded for] copper cash 3 <i>yang</i> 5 <i>chōn</i> [3.5 <i>yang</i>] [same rate as below although not stated]
----		----
32		7 <i>sōk</i> 14 <i>tu</i> 8 <i>sūng</i> [154.8 <i>tu</i>] into milled rice 54 <i>tu</i> 1 <i>sūng</i> 8 <i>hop</i> [54.18 <i>tu</i>] [at a exchange rate of] 7 <i>tu</i> for 1 <i>yang</i>
33		3 <i>sōk</i> 1 <i>tu</i> [61 <i>tu</i>] [traded for] copper cash 8 <i>yang</i> 5 <i>chōn</i> 4 <i>pun</i> [8.54 <i>yang</i>] at the exchange rate of [1 <i>sōk</i> for] 2 <i>yang</i> 8 <i>chōn</i>
34		9 <i>tu</i> lost (見失)
35		17 <i>tu</i> 2 <i>sūng</i> [17.2 <i>tu</i>] depreciation (縮)
[Total]	[540 <i>tu</i>]	[540 <i>tu</i>]

NB: units are *sōk* (石), *tu* (斗), *sūng* (升), and *hop* (合) with *sōk* : *tu* : *sūng* : *hop* ratios at 1 : 20 : 10 : 10.

^{a)} See note ^{a)} at top under Unhulled Rice Ledger.

^{b)} See note ^{b)} at top under Unhulled Rice Ledger.

^{c)} The carry down amount is missing 5 *sūng* from the previous ledger, probably indicating a depreciation deduction from autumn to spring.

Source: Source: Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 642.

Milled Rice Ledger (米秩)

Line	Debit	Credit
1	Carry down (傳受) 4 <i>sūng</i> [0.4 <i>tu</i>]	
2	From unhulled rice 54 <i>tu</i> 1 <i>sūng</i> 8 <i>hop</i> [54.18 <i>tu</i>]; from this (內) , [the following expenditures were made]	
3	total 54 <i>tu</i> 5 <i>sūng</i> 8 <i>hop</i> [54.58 <i>tu</i>]; from this (內) , [the following expenditures were made]	
4		----
5		23 <i>tu</i> 3 <i>sūng</i> [23.3 <i>tu</i>] traded for copper cash 11 <i>yang</i> 5 <i>chōn</i> 4 <i>pun</i> [11.54 <i>yang</i>], at the exchange rate of 2 <i>tu</i> 1 <i>sūng</i> per <i>yang</i> [ERROR: per 1.04 <i>yang</i>]
6		1 <i>tu</i> 8 <i>sūng</i> for wine
7		3 <i>tu</i> for food
		graveside labour ^{a)}

25		2 <i>sŭng</i> 3 <i>hop</i> [0.23 <i>tu</i>] depreciation (縮)
26		54 <i>tu</i> 5 <i>sŭng</i> 8 <i>hop</i> subtotal for expenditures
[Total]	[54.58 <i>tu</i>]	[54.58 <i>tu</i>]

NB: units are *sŏk* (石), *tu* (斗), *sŭng* (升), and *hop* (合) with *sŏk* : *tu* : *sŭng* : *hop* ratios at 1 : 20 : 10 : 10.

^{a)} Indicates labour costs.

Source: Source: Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng*, vol. 21 (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 643.

Copper Cash Ledger (錢秩)

Line	Debit	Credit
1	Carry down (傳受) 12 <i>yang</i> 4 <i>chŏn</i> [12.4 <i>yang</i>]	
2	From unhulled rice 8 <i>yang</i> 5 <i>chŏn</i> 4 <i>pun</i> [8.54 <i>yang</i>]	
3	From milled rice 11 <i>yang</i> 5 <i>chŏn</i> 4 <i>pun</i> [11.54 <i>yang</i>]	
4	32 <i>yang</i> 4 <i>chŏn</i> 8 <i>pun</i> [32.48 <i>yang</i>]; from this (內) , [the following expenditures were made]	
6		2 <i>chŏn</i> [0.2 <i>yang</i>] for wine for graveside rite
7		2 <i>chŏn</i> 2 <i>pun</i> [0.22 <i>yang</i>] for food for same
8		1 <i>chŏn</i> 3 <i>pun</i> [0.13 <i>yang</i>] for herring
9		2 <i>chŏn</i> [0.2 <i>yang</i>] for tobacco
10		5 <i>pun</i> [0.05 <i>yang</i>] for onions
11		9 <i>pun</i> [0.09 <i>yang</i>] for soy dishes
12		5 <i>pun</i> [0.05 <i>yang</i>] for salt
13		1 <i>chŏn</i> 2 <i>pun</i> [0.12 <i>yang</i>] for side dishes
15		6 <i>yang</i> as loan to the Tae-kye (“Great Kye”)
16		6 <i>chŏn</i> [0.6 <i>yang</i>] transferred (推移) to pay production costs (所耕)^{a)} for So`t`o paddy land; to [personal account for] ????? household ^{b)}
17		1 <i>yang</i> 5 <i>pun</i> [1.05 <i>yang</i>] transferred (推移) to pay production costs (所耕)^{a)} for Sa paddy land; to [personal account for] Hwaso household ^{b)}
19		1 <i>yang</i> 2 <i>pun</i> [1.02 <i>yang</i>] traded for barley to make 13 yeastcakes
27		1 <i>yang</i> for ritual necessities to celebrate the mountain god (山神)
34		24 <i>yang</i> 6 <i>chŏn</i> 2 <i>pun</i> [24.62 <i>yang</i>] subtotal of expenditures
35		11 <i>yang</i> 8 <i>chŏn</i> 6 <i>pun</i> [11.86 <i>yang</i>] remaining
[Total]	[32.48 <i>yang</i>]	[32.48 <i>yang</i>]

NB: units are *yang* (兩), *chŏn* (錢), and *ip* (立) or *pun* (分) with *yang* : *chŏn* : *ip* (*pun*) ratio at 1 : 10 : 10.

^{a)} See note ^{b)} above top in Unhulled Rice Ledger.

^{b)} These are loans.

^{c)} Labour costs.

Source: Source: Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 643.

[Recording period is autumn, 1795]:

Autumn Rent from Association Land (秋捧)

Line	Debit	Credit
1	Paddy rice 45 <i>sōk</i> 15 <i>tu</i> [915 <i>tu</i>]; from this (內) , [the following expenditures were made]	
2		2 <i>sōk</i> [40 <i>tu</i>] Hwaso widow household unpaid loan; 8 <i>tu</i> repaid in autumn of 1828 by the Chwaryang household
3	Actually delivered 43 <i>sōk</i> 15 <i>tu</i> [875 <i>tu</i>]	
4	Production costs supplied unhulled rice 5 <i>sōk</i> 6 <i>tu</i> [106 <i>tu</i>]	
5	[Included] for ancestral ritual necessities for the Tae-kye (“Great Kye”) unhulled rice 6 <i>sōk</i> [120 <i>tu</i>]	
6	Copper cash traded for unhulled rice 9 <i>sōk</i> 10 <i>tu</i> [190 <i>tu</i>]	
7	total 64 <i>sōk</i> 11 <i>tu</i> [1291 <i>tu</i>]; from this (內) , [the following expenditures were made]	
8		----
28		10 <i>tu</i> for ritual necessities to celebrate the mountain god (山神)
29		1 <i>tu</i> 5 <i>sūng</i> [1.5 <i>tu</i>] traded for barley 1 <i>tu</i>
30		----
31		11 <i>sōk</i> 11 <i>tu</i> 5 <i>sūng</i> [231.5 <i>tu</i>] subtotal of expenditures
32		52 <i>sōk</i> 19 <i>tu</i> 5 <i>sūng</i> [1059.5 <i>tu</i>] remaining
[Total]	[1291 <i>tu</i>]	[1291 <i>tu</i>]

NB: units are *sōk* (石), *tu* (斗), *sūng* (升), and *hop* (合) with *sōk* : *tu* : *sūng* : *hop* ratios at 1 : 20 : 10 : 10.

Source: p. Source: Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 643-644.

Copper Cash Ledger (錢秋)

Line	Debit	Credit
1	Remaining copper cash (留錢) 11 <i>yang</i> 8 <i>chōn</i> 6 <i>pun</i> [11.86 <i>yang</i>]	
2	Debt repayment on principal 6 <i>yang</i>	
3	Interest [on same debt] 1 <i>yang</i>	
4	Production costs (所耕)^{a)} transferred (推移) [from personal account] 5 <i>yang</i> 1 <i>chōn</i> 5 <i>pun</i> [5.15 <i>yang</i>] ^{b)}	
5	total copper cash 24 <i>yang</i> 1 <i>pun</i> [24.01 <i>yang</i>]; from this (內) , [the following expenditures were made]	
6		19 <i>yang</i> traded for unhulled rice 9 <i>sōk</i> 10 <i>tu</i> [190 <i>tu</i>], at an exchange rate of [1 <i>sōk</i>] per 2 <i>yang</i>
7		5 <i>yang</i> 1 <i>pun</i> [5.01 <i>yang</i>] remaining
[Total]	[24.01 <i>yang</i>]	[24.01 <i>yang</i>]

NB: units are *yang* (兩), *chōn* (錢), and *ip* (立) or *pun* (分) with *yang* : *chōn* : *ip* (*pun*) ratio at 1 : 10 : 10.

a) See note b) above top in Unhulled Rice Ledger.

b) This is a loan repayment.

Source: Source: Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 644.

Yeastcake Ledger (曲子秩)

Line	Debit	Credit
1	Carry down (傳受) 8 yeastcakes	
2	Newly supplied 13 yeastcakes	
3	total 21 yeastcakes; from this (內) , [the following expenditures were made]	
4		----
5		----
6		3 yeastcakes expenditure subtotal
7		[18 yeastcakes] remaining
[Total]	[21 yeastcakes]	[21 yeastcakes]

Source: Source: Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 644.

Barley Ledger (木麥秩)

Line	Debit	Credit
1	Carry down (傳受) 1 <i>tu</i>	
2	Newly supplied 1 <i>tu</i>	
3	Total 2 <i>tu</i>	consumed in the autumn rites
[Total]	[2 <i>tu</i>]	[2 <i>tu</i>]

NB: units are *sōk* (石), *tu* (斗), *sūng* (升), and *hop* (合) with *sōk* : *tu* : *sūng* : *hop* ratios at 1 : 20 : 10 : 10.

Source: Source: Source: Hanguk Chōngsin Munhwa Yōnguwōn, ed., *Komunsō chipsōng*, vol. 21 (Collection of documents, vol. 21) (Sōngnam: Hanguk chōngsin munhwa yōnguwōn, 1995): 644.

Chairman of the Association (門長) [no signature]

Auditor (公事員) [no signature]

Illustration 3

ca. 1720; Source: *Furukawa-ke oboegaki-utsushi*Table 4 Original Text and Translation for *Furukawa-ke oboegaki-utsushi* excerpt

Line	(Grass writing converted to square hand style)	Translation
1	覚	Memorandum
2	一 御免銀千四百拾七貫五百匁	1. [Bakufu] approved export silver: 1,417.5 <i>kanme</i>
3	内式拾七貫目	from this, 27 <i>kanme</i> [will be spent on the following]

Source: *Furukawa-ke oboegaki-utsushi*.Table 5 Original Text and Translation for Unhulled rice *ch'unjo* (春租)

Spring period (Collateral Branch Clan), 1819

Line	Original text		Translation		conversion to <i>tu</i>
1	己卯春		1819 spring		
2	傳受租七十三石八斗八升三合		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		Tillage cost		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'öl	5
11	一石私乃	Remuneration	20
12	五斗例給種子 大元	seed according to precedent	Tae Wön 5
13	十四斗四升光大畝七斗落半 所耕 次先	Kwangdae paddy 7 <i>turak</i> half tillage cost Ch'a Sön	14
14	六斗大草畝二斗落半耕 冷泉宅	Taech'o paddy 2 <i>turak</i> half tillage cost Naeng Ch'ön House	6
15	六斗二升甬洞畝三斗落半所 萬貴	Yongdong paddy 3 <i>turak</i> half tillage cost Mangwi	6.2
16	四斗堂洞畝三斗落半所耕 興得	Tangdong paddy 3 <i>turak</i> half tillage cost Hŭng Dök	4
17	四斗甬洞畝三斗落半所耕 肖伊	Yongdong paddy 3 <i>turak</i> half tillage cost Soi	4
18	四斗東亭畝四斗落種子 小八仙	Tongjung paddy 4 <i>turak</i> seed So P'al Sön	4
19	五斗所土畝四斗落種子推移 秋捧次 望湖宅	Sot'o paddy 4 <i>turak</i> seed loan to be repaid within autumn harvest time Mangho House	5
20	二斗同防川役糧	Food costs for labour when building a dam for flood prevention	2
21	十斗山直所耕	Grave keeper's tillage cost	10
22	五斗光大畝半所耕 億伊	Kwangdae paddy half tillage cost Ök Yi	5
23	十三斗八合石朴畝四斗落半 所 國山宅	Sökbak paddy 4 <i>turak</i> half tillage cost Kuk San House	13.08
24	五斗孝梯畝堰水役糧 花方宅	Food costs for labour when irrigating Hoje 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 <i>sök</i> for [cash] 3 <i>nyang</i>	40
27	七石作米五十二斗五升白七 斗五升例	Milled 7 <i>sök</i> [unhulled rice into] 52 <i>tu</i> 5 <i>süng</i> hulled rice at a rate [of 1 <i>sök</i> unhulled rice yields hulled] white rice 7 <i>tu</i> 5 <i>süng</i>	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 <i>tu</i> 1 <i>süng</i> 3 <i>hop</i> for cash 5 <i>chön</i> [grain in a year of dearth]	7.13
30	五石作米四十斗八斗例	Milled 5 <i>sök</i> 40 <i>tu</i> [unhulled rice] into 40 <i>tu</i> at a rate [of 1 <i>sök</i> unhulled rice yields hulled rice] 8 <i>tu</i>	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 <i>sŏk</i> 11 <i>tu</i> 8 <i>sung</i> for cash 16 <i>nyang</i> 9 <i>chŏn</i> 4 <i>pun</i> at a rate [of 1 <i>sŏk</i> =] 1 <i>nyang</i> 6 <i>chŏn</i>	211.8
33	十斗文必勳氏嚴親初喪賻	Donation for Mun P'ilhun's parents' mourning 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 mourning expenses	10
37	十三斗二升五合作米三斗三升	Milled 13 <i>tu</i> 2 <i>sŭng</i> 5 <i>hop</i> [unhulled rice into hulled rice] 3 <i>tu</i> 3 <i>sŭng</i>	13.25
38	三石作米二十斗一升六斗七升例	Milled 3 <i>sŏk</i> [unhulled rice into] 20 <i>tu</i> 1 <i>sŭng</i> hulled rice at rate [of 1 <i>sŏk</i> unhulled rice yields hulled rice] 6 <i>tu</i> 7 <i>sŭng</i>	60
39	二十一石別廳除	Deducted from auxiliary building	420
40	荒 三石作米二十一斗 七斗例	Milled [grain in a year of dearth] 3 <i>sŏk</i> [unhulled rice into] 21 <i>tu</i> hulled rice at rate [of 1 <i>sŏk</i> unhulled rice yields hulled rice] 7 <i>tu</i>	60
41	一石六斗九升七合縮	1 <i>sŏk</i> 6 <i>tu</i> 9 <i>sŭng</i> 7 <i>hop</i> depreciation	26.97
42	已上用七十三石一斗八升三合	Above expenditures total 73 <i>sŏk</i> 1 <i>tu</i> 8 <i>sŭng</i> 3 <i>hop</i>	1461.83
43	十七斗留	17 <i>tu</i> remainder	17

Sources: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng vol. 22* (Collection of documents, vol. 22) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1995): 5-6.

Table 6 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 membership	Milled	Traded for copper	Ancestral rites and grave upkeep	Carry over autumn	Students, education, charity, public bldgs.	Depreciation	Labour for irrigation repairs
841 <i>tu</i>	0 <i>tu</i>	35 <i>tu</i>	106 <i>tu</i>	210 <i>tu</i>	319.2 <i>tu</i>	68 <i>tu</i>	0 <i>tu</i>	52 <i>tu</i>	39.8 <i>tu</i>	11 <i>tu</i>
99.9%	0%	4%	12.6%	25%	38%	8.1%	0%	6.2%	4.7%	1.3%

Source: Hanguk Chŏngsin Munhwa Yŏnguwŏn, ed., *Komunsŏ chipsŏng vol. 21* (Collection of documents, vol. 21) (Sŏngnam: Hanguk chŏngsin munhwa yŏnguwŏn, 1996): 638.

Table 7 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 membership	Milled	Traded for copper	Ancestral rites and grave upkeep	Carry over autumn	Students, education, charity, public bldgs.	Depreciation	Labour for irrigation repairs
1478.83 <i>tu</i>	176.68 <i>tu</i>	0 <i>tu</i>	0 <i>tu</i>	373.25 <i>tu</i>	258.93 <i>tu</i>	96.00 <i>tu</i>	17.00 <i>tu</i>	530 <i>tu</i>	26.97 <i>tu</i>	0 <i>tu</i>
100%	11.95%	0%	0%	25.24%	17.51%	6.49%	1.15%	35.84%	1.82%	0%

source: Hanguk Chǒngsin Munhwa Yǒnguwǒn, ed., *Komunsǒ chipsǒng vol. 21* (Collection of documents, vol. 21) (Sǒngnam: Hanguk chǒngsin munhwa yǒnguwǒn, 1996): ???.

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Glossary

- bo-kye (洑契) irrigation association
- Chae Ch'öl (再哲) individual household name
- Chang`am tong-kye (場巖洞契) Chang`am village association
- Chang`am tong-kye suhaeng`an (場巖洞契隨行案) Chang`am village association roll
- chesa-kye (祭祀契) association for rituals
- chil (秩) ledger
- chinsa (進士) `advanced scholar` within the Literary licentiate degrees awarded through the civil service examination
- cho (租) unhulled rice
- chok-kye (族契) clan association
- Chölla province (全羅)
- chönsu (傳受) balance brought forward from the last accounts
- chönyosi-chu (傳與時酒) audit wine
- ch`u (推) temporarily borrowed
- ch`uk (縮) depreciation and transaction cost
- ch`ul (出) outgoing
- chön-chil (錢秩) copper cash ledger
- chönsu (傳受) balance carried down
- chönyö (傳與) balance carried down
- ch`ubong (秋捧) Autumn receipts of harvest (unhulled rice)
- daifukuchō (大福帳) most common Japanese name for commercial ledgers from the seventeenth to the twentieth century
- gokja-chil (曲子秩) yeast cake ledger
- ha (下) expenditure
- Haenam (海南) county name in Chölla province
- hap (合) total
- honin-kye (婚姻契) marriage association
- hyangyak (鄉約) community compact
- i (以) total income or assets
- isang (已上) subtotal
- ip (入) incoming
- kye (契) mutual assistance association
- Imjin Waeran (壬辰倭亂) Hideyoshi's invasion of Korea (1592-1598)
- ingjon-chil (仍存秩) ledger for transactions between clan accountants and clan

members

kǒ (去) outgoing

Kojanggkye ch'aek (古墻契冊) account book of the Haenam Yongdong Village Yun clan

Kojik (庫直) warehouse keeper

Kūmswae kodangye ch'aek (金鎖古淡契冊) account book of the Haenam Yongdong Village Yun clan

kūp (給) expenditure

Kwansōngye ch'aek (觀仙契冊) account book of the Haenam Yongdong Village Yun clan

mi-chil (米秩) milled rice ledger

mongmaek (木麥) barley

mungye (門契) clan association

nae (內) total income or assets

nae² (來) incoming

Namp'yōng Mun clan (南平文氏)

nong'u-kye (農牛契) oxen-leasing association

pong (捧) receipt

pyōl yusa-chil (別有司秩) ledger of items specially handled by a bursar

sagae ch'ibubōp (四介治簿法) accounting system used by Koryō and Chosōn period merchants in Kaesōng

saengwōn (生員) (classics licentiate) degree

sagae songdo ch'ibubōp (四介松都治簿法) term used by modern historians to refer to the accounting system used by Koryō and Chosōn period merchants in Kaesōng

sang (上) receipt

sang-kye (喪契) funeral association

sangp'yōng t'ongbo (常平通寶) Korean copper cash coins

sanjiaozhang (三脚帳) Chinese three footed account

sogyōng (所耕) expenditure for annual production cost

sojong-kye (小宗契) association of the branch or collateral clan

sōk (石=섬 sōm) dry measure

song-kye (松契) tree-planting association

sōwōn (書院) private academy

sūng (升=되 twe) dry measure

Sūngjōngwōn ilgi (承政院日記) Diary of the Royal Secretariat

Sungyōlsa (崇烈祠) chartered name of the Yongsan Sōwōn

Taedong (大同) principle of social organisation based on Zhu Xi's *Household Rites*
taejong-kye (大宗契) association of the head clan
T'aengniji (擇里志) Korean book title
Tae Wŏn (大元) individual household name
toejaeng-i (되쟁이:升手) village grain handler
tong-kye (洞契) village association
tu (斗=말 mal) dry measure
yang (兩) copper cash measure
yen (円 or 圓) modern Japanese currency
Yi Chung-hwan (李重煥) Eighteenth-century Korean author
Yŏng'am (靈巖) place name
yonghagi (用下記) account ledgers
Yongsan Sŏwŏn (龍山書院) name of a private academy
Yŏnp'o Mungye ch'aek (蓮浦門契冊) account book of the Haenam Yongdong Village
Yun clan
yu (留) remaining assets
yusa (有司) bursar