Korean Double-Entry Merchant Accounts from Kaesong City (1786-1892)

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ABSTRACT

Until recently we have had no direct evidence of double-entry accounting in Korea before the opening of the country in 1876 and little information on commercial history. However, using heretofore inaccessible accounts for the period 1786 to 1892 preserved in North and South Korea, we can now demonstrate the existence of a double-entry method in the pre-open ports period. The accounts were kept by the merchants of Kaeson, who traded cotton and rice, provided banking services, and invested in ginseng production.

Keywords: double-entry, Korea, Kaesong, Kaesong merchants, ginseng

I.

Close empirical studies of East Asian business history are rare. So too are studies of account books from East Asia before 1850. And, examples of merchants who traded a product, offered banking services, and invested in the production of a product are even rarer. This paper offers information on all these points. Below, we examine a newly re-discovered cache of merchant accounts preserved in the Democratic People’s Republic of Korea together with other merchant accounts preserved in the Republic of Korea. These accounts come from the city of Kaesong, whose merchants, for a millennium, were famous for their commercial acumen and sophisticated accounting. Until the 20th century, Kaesong was the leading commercial city on the peninsula, with 52 percent of household heads declaring “commerce” as their occupation in 1900, compared to just 23.4 percent in the capital Seoul. The oldest known accounts (from 1786) are preserved in the Academy of Social Sciences in P’yongyang and in public and private hands in South Korea, such as in the household of Mr. Pak Yong-jin of South Korea, whose father was a Kaesong merchant.

This paper has two main objectives: to demonstrate the existence of a double-entry Korean accounting method from journalizing to posting—a complete articulation of accounts—and to show an example of a financial statement or what is known today as the balance sheet and income statement. The paper also
outlines the economic context of the merchants who produced these accounts. The Kaesŏng merchants traded Korean ginseng internationally, loaned money, issued bills of exchange, traded promissory notes, formed *commenda* and partnerships, and engaged in direct investment, primarily in ginseng production. Their activities depended on a double-entry accounting method. They combined Day Books with Journals (日記) and then posted to Ledgers (長冊)—Liabilities (他給長冊) and Assets (外上長冊)—leaving us two major sets of books. At the end of a given period (usually a year), they compiled a Financial Statement (周會計冊), which contained Accounts Payable (給次秩), Accounts Receivable (捧次秩), and Net Assets (餘文). Finally, the merchants composed an Income and Expense Account Statement (會計斟酌抄) that clarified income and expense. The income and expense statement subtracted Income (入) from Expenditure (出) to arrive at Net Gains (餘文).

There is no known complete set of books from before the late 19th century in Korea, but we can demonstrate a consistency in form and terms that support assertions about the existence of a double-entry bookkeeping method there that dates to at least 1786. Since 2007, Cho Ik Soon and Jeong Seok Woo have argued that the 1786 accounts used here showed “a unique double-entry bookkeeping system,” but their research did not find a complete set of accounts, and they have not been able to confirm the existence of a “complete accounting cycle.” We have reconstructed a composite set of books from North and South Korean records spanning 1786 to 1892. Our Day Book-Journal and Liabilities and Assets

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2. Jack Goody criticises Max Weber for his Eurocentrism but concedes that “Weber was misinformed” (75) and lacked “empirical material” (81). Goody, *East in West*.

3. In 1968, Eisuke Zenshō mentioned that he had seen late 18th century accounts in Pyŏngyang in 1921, but these remained inaccessible until recently. Zenshō, “Kaijō no shōnin,” 119.

4. Oh, “Economic Status,” 25.

5. Oh, “Economic Status,” 32.

6. Oh, “Economic Status,” 33.

7. For a list of known extant documents, their details and whereabouts prior to the release of these DPRK documents and discovery of the Pak Yongjin collection, see Sugimoto, *Kaigai boki no ronri*, 49-50.

8. A ‘journal’ is a recording of transactions in chronological order before they are sorted into accounts referred to as ‘ledgers.’ The two most important ledgers are called ‘liabilities’ and ‘assets.’ ‘Assets’ amalgamate records of cash or goods coming in, and ‘liabilities’ amalgamate records of cash or goods going out.

9. Cho and Jeong examined the DPRK records in 2007 and lamented the absence of a Day Book-Journal (日記帳) and a Financial Statement (identified below as chu hoegye-ch’ae 會計冊), which prevented them from following entries from Journal to Ledgers and determining if the books were ever balanced and closed. Cho and Jeong, “Poksik pugi,” 2007, 105, 107.

10. Cho and Jeong, “Republic of Korea,” 2011, 206.
Ledgers come from the same set (1887), so we are able to follow the same entries from Journal to Ledgers. We offer examples from the earliest known Liabilities Ledger (1786) to demonstrate a consistency in form and technical terms with the 1887 examples. Our Financial Statements and Income and Expense Account both come from 1892. Although we do not have a complete set of books from 1786, by examining the common form and common terms in all these books, we can reconstruct an articulated set of accounts. The Korean books show that a sophisticated commercial technology was in use long before the introduction of European accounting methods, and while there are similarities with known Chinese styles, the unique, Korean aspects mark the system described below as fundamentally different.

These account books show that the Kaesŏng merchants practiced double-entry bookkeeping from at least the 1780s. Every entry in the Day Book-Journal was posted to a Liabilities Ledger or to an Assets Ledger and the accounts were balanced and closed. At least from the late 19th century, and probably earlier, the method was known as the Sagaе Songdo Ch’ibubŏp (Four-sided Kaesŏng Ledger Method). Information on the system is available in Korean,10 Japanese,11 and outlined in English.12 Hyŏn Pyŏng-chu’s pioneering 1916 description of the method argues that the Kaesŏng merchants were the first in East Asia to invent the system,13 and Yun Kŭn-ho states that the method dates from the early Koryŏ period (11th to 13th centuries),14 but there is no direct evidence to support these claims.15 The oldest known direct evidence is presented here.

Until the re-discovery of the accounts in North Korea, the oldest known four-sided ledger dates back to 1854 and is preserved in the Kobe University Library.16 The antiquity of the re-discovered accounts discussed here is significant.

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10 After Hyŏn, who introduced the method to modern readers, Yun Kŭn-ho (1922-88) is the doyen of studies on The Korean Four-Sided Ledger Method of Kaesŏng City. Included here are a few representative works. Hyŏn, Sagaе Songdo Ch’ibubŏp, 1916; Hong, “Songdo Sagaе munso,” 1962; Cho, “Taehan Ch’ŏn’il Unhaeng,” 1969; Yun, Sagaе Songdo, 1970; Yun, “Poksiŏk pugi ui sŏn’gu,” 1978; Yun, Han’guk hoesaen yŏngu, 1984; Yun, “Sagaе songdŏhp ui sojom kamingsong,” 1984; Cho, Sagaе Songdo Ch’ibubŏp chŏnsa, 2000; Cho and Chang, Chosŏn sidae hoesaen munso, 2006; and Cho and Jeong, “Poksiŏk pugi,” 2007.

11 Zenshō, “Kaijo no shōnin,” 1968; Yoshida, “Kaijo boki kenkyū,” 1988; Yoshida, “Kohe daigaku shozō,” 1999; Sugimoto, Kajō bokihō no tori, 1998; So Yon Dal, “Kan-Chosŏn koyu boki,” 2000; and Cho and Jeong, 2007, trans. by Sugimoto, “Fukushiki boki,” 2010.

12 Yun, “The Forerunner,” 1977; Kang, “Merchants of Kaesŏng,” 1978; and Jun and Lewis, “Accounting Techniques in Korea,” 2006; Cho and Jeong, “Republic of Korea,” 2011.

13 Hyŏn, Sagaе Songdo Ch’ibubŏp, 1916, 2.

14 For a discussion of the context (trade with Song, Yuan, Jurchen, Japanese, and Muslim merchants, currency—especially silver—and civil groups acting as corporate bodies) that may have given rise to the method, see Yun, Sagaе Songdo, 1970, 17-30. Li Xiaolin et al. accept Yun on the antiquity of the system and argue that the Korean system is the world’s oldest double-entry method, although the principles can be traced back to income and expense accounts for wine in the early Han dynasty (206 BC-5 AD). Li et al., Bijiao, 2007, 56-57, 191-94.

15 For a fuller description of the method and a discussion of its antiquity, see Jun and Lewis, “Accounting Techniques in Korea,” 55-57.

16 Yoshida, “Kohe daigaku shozō,” 68.
Not until after 1876, and probably not until the 1900s, did Kaesŏng merchants have reason to acquire European techniques. Indeed, Hyŏn's 1916 account was produced to propagate the "Kaesŏng method" among Korean merchants similar to Pacioli's propagation of the "Venetian method." The re-discovered accounts in the DPRK reveal an integrated method as outlined by Hyŏn. This is demonstrated below by offering example entries to show postings from the Day Book-Journals to the Ledgers and examples of a Financial Statement and an Income and Expense Account.

Our second concern is to set the system in a commercial context. We consider who created these accounts and why. The Kaesŏng merchants formed commenda and partnerships (tojung), loaned money, issued bills of exchange, traded promissory notes, and made direct investments in commodity production. Their primary commodity was ginseng, which is a potent herb with multiple health benefits and long considered by East Asians as a sexual stimulant. Korean wild ginseng was internationally famous, and Kaeso̖ng merchants developed large-scale cultivation from the late 18th century.

A final concern is beyond this paper, but we hope that our work may contribute to a larger question: the significance of accounting for socio-economic change. Double-entry accounting has long been touted by Western sociologists and economists (Max Weber, Werner Sombart, and Joseph Schumpeter, in particular) as the sine qua non of the rationality that created capitalism. If double-entry accounting is the hallmark of capitalism, did double-entry bookkeeping contribute to the rise of capitalism in Europe? Carruthers and Espeland have lamented that, to answer this question, "we would have to undertake a comparative analysis of European and non-European accounting history, and the evidence for the latter is simply much too sparse." We hope this paper can show that Kaesŏng merchants used a double-entry method of accounting, that their calculative mentality was "capitalist," and that this evidence from "non-Europe" can contribute to global comparisons of capitalist behaviour.

II.
In his 1494 treatise, Luca Pacioli (1445-1517) the "Father of Accounting,"
mentioned three principal books: collected memoranda, journal, and ledger. Among the three, he considered the journal and ledger as most important. 21 The organizers of the Kaesong books journalized immediately and did not keep any memoranda, but this does not mean that memoranda-like documents did not exist. At the Academy of Korean Studies, significant numbers of single-page documents 22 explain individual transactions and had the force of law when signed. A typical memorandum described a transaction in prose and contained all essential information, including the implicit duality of the transaction, or what Littleton long ago identified as the chief characteristic of the journal. 23

Figure 1 shows the first page of a Kaesong Journal from 1887. Here, we can see sixteen columns, which convert statements of transactions from memoranda into technical records. Column 1 on the far right has the date and identifies the journal. It also invokes good fortune from Heaven. Columns 2 through 16 are entries of transactions. At the top and beginning of each entry, there are vertical lines and elongated dots that look like short lines. The vertical lines indicate a posting to this page of a transaction from a memorandum. 24 The elongated dots near the vertical lines indicate confirmation of the double posting from this Day Book-Journal to the Ledger. The horizontal lines at the bottom link related entries of receipt and payment that counter-balance.

Pacioli called the second important book the ‘journal’ from the old French journal or jornel, which relates to the Latin diurnalis, meaning ‘book for inventories and daily accounts.’ The Kaesong merchants similarly used the characters for ‘daily record’ (ilgi, 日記). The journal in Figure 1 was kept in an orderly way, contained the whole of a trader’s transactions, offered a trial balance, provided a cash-flow statement, and had no elaborate groupings, just entries in chronological order, some of which are linked by horizontal lines at the bottom. The position of the date was always at the beginning of the page (top right) and all transactions for that day follow. Similarly, Pacioli stipulates that the dates for journals come at the beginning of each page and then all entries follow. 25 Pacioli mentions pagination for both Journal and Ledger, but no pagination appears in the Kaesong Journals or Ledgers. 26 Rather, the dates in the Korean ledgers come above each entry (Figure 2) or within each entry (Figure 3). This focus on dates for cross-referencing is one

21 Pacioli, Treatise on Double-Entry Book-Keeping, 13.
22 E.g., pulmanggi (不忘記 ‘records not to be forgotten’), myongsimnok (銘心錄 ‘imprint on the mind’), chimp’yo (傳票 ‘memorandum’), or chamun (尺文 ‘memorandum’).
23 Littleton, “The Evolution of the Journal Entry,” 383.
24 Pacioli specified that entries in the journal “must bear the same mark as is on the Memorandum” and “as you transfer from the Memorandum to the Journal you will draw a single line across each item thus,’ which will denote that said item has been posted in the Journal.” Pacioli, Treatise on Double-Entry Book-Keeping, 23, 28-29.
25 Pacioli, Treatise on Double-Entry Book-Keeping, 23.
26 Pacioli also stipulates that the date be placed at the top in the margin of the ledgers. Pacioli, Treatise on Double-Entry Book-Keeping, 30.
Figure 1. The 1887 Journal (日記)

currently remaining cash 時在文

dot indicates transfer to Ledger

date of entry and/or interest rate and vertical line indicating transfer from Memorandum

deptor

credit term 債給

debit term 債給

transaction details

cash 文

amount

date of book (08/1887), Journal, no. 1, invocation

cash outgo, credit 下

cash income, debit 上

Source: Pak Yong-jin Collection.
reason why the day-book and the journal were easily combined.27

In addition to posting marks and dates, the standardization of money is even more important for double-entry accounting. A standardized value raises the transactions above being mere barter.28 In pre-1900 Korea, there were various forms of money: copper cash, unhusked rice, husked rice, cotton cloth, silver, gold, and even beans. All records in the journal and in the ledgers are in copper cash, without conversions. The use of copper cash was made easier by large coinage issues beginning in 1678. Each entry in Figure 1 includes the character mun (文) as an indicator of cash.

The journal carries a variety of technical terms. Each entry ends with sang (上), which means 'debits Cash Account,' and the ha (下), which means 'credits Cash Account,' or entries without sang (上) or ha (下) indicate trades without cash conducted on credit. These terms indicate the movement of funds into or out of the journal. Other terms indicate debtor and creditor. Pacioli specifies special terms for the journal to indicate debtor or creditor and requires all entries to carry these terms.29 Likewise, all entries in the Kaesŏng Journals carry indicators for debtor and creditor. One term for creditor is ip (入),30 which always appears towards the beginning of the entry, following the creditor's name. The creditor transaction entry notes detail and amount and concludes with the term sang (上), which denotes a debit to the cash account that will be given back in the future. One term for debtor is chaegüp (債給),31 which always appears at the beginning of an entry, following the debtor's name. The debtor entry notes detail and amount and concludes with ha (下), which denotes a credit to the cash account that will be received in the future. In other words, ip always indicates a credit side liabilities increase; sang always denotes a debit side cash increase. Chaegüp always denotes a debit side asset increase; ha always indicates a credit side cash decrease. Each entry always inserts a combination of two characters with contra meaning at the beginning and at the end: credit-debit or debit-credit.

To illustrate, in Table 1, we have taken examples from Figure 1. Columns 1 through 5 and 16 are rendered horizontally. In Table 1, column A shows the date and the rate for calculating interest. In Figure 1, this information appears at the top of the page next to the vertical lines. Column B identifies the individual or corporate entity involved. Columns C and G show the beginning and ending of each entry. The technical abbreviations we see here (ip ~ sang or chaegüp ~ ha) have been shown to have appeared in Korean accounts by at least 1262.32

27 Cho and Jeong characterize the system as being “transaction focussed,” because of the emphasis on dates, in contrast to other Korean pre-modern records that appear to be “account focussed.” Cho and Jeong, “Poksik pugi,” 107 and 121-22.

28 Littleton, “The Antecedents of Double-Entry,” 141.

29 Pacioli, Treatise on Double-Entry Book-Keeping, 24.

30 We have identified at least one other character equivalent to ip and that is 還 (hwan or ‘repay’), which appears instead of ip.

31 Other terms are taego˘ (貸去) and pongch’a (捧次).

32 Hŏ, “1262 nyŏn, part II,” 61-62. Jun, Choŏn sidae Honam, 281-82.
Table 1. Journal (日記) Entries from 1887 in Figure 1 Converted into Horizontal Entries

| Columns on page 1 of 1887 Day Book-Journal in Figure 1 | A | B | C | D | E | F | G |
|----------------------------------------------------------|---|---|---|---|---|---|---|
| Date | Debtor / Creditor name | Credit term indicator | Transaction | Type of money | Amount | Credit / Debit indicator |
| 1887 Journal (歳丁亥八月日 日記第一上吉辰) | | | | | | |
| 1 | | | | | | |
| 2 | 15/08/1887 (八月十五日) | Palgok-t’aek (鶉谷宅) | | Figyo-taek received [a loan with interest] beginning from the 8th month of a principal sum of copper cash [from Palgok-t’aek] (鶉谷本業銭屋橋頭宅來) | Cash (文) | 3,846.16 yang (三千八百四十六兩一錢六分) | Cash income (debit) (上) |
| 3 | [same as above] | | | Chugyo-tojung received [a loan with interest] beginning from the 8th month of 384,616 pun [or 3,846.16 yang] at 1.6% interest [from Tang-o-jo] (鶉谷本業銭三[千]三文一之[三分]八四六分一之[三分]八百四十六兩一錢) | Cash (文) | 6,153.84 yang (六千一百五十三兩四錢) | Cash income (debit) (上) |
| 4 | [same as above] with interest rate at 1.5% (邊十$ 戈[銭]式) | Kanggok-t’aek (鴨谷宅) | | Principal issued in 8th month for repayment on the last day of the 2nd month of next year (八月本 明二月晦押次) | Cash (文) | 5,000 yang (五千兩) | Cash outgo (credit) (下) |
| 5 | [same as above] with interest rate at 7.5% (邊十$ 戈[銭]式) | Kim Tŏk-kyŏng (金德卿) | | Principal issued in 8th month for repayment on the last day of the 10th month (八月本 十月晦押次) | Cash (文) | 5,000 yang (五千兩) | Cash outgo (credit) (下) |
| | | | | | | |
| 16 | cash account (時在) | | | | | |

Source: Pak Yŏng-jin Collection.

a The Kaesong accounting books use numerical symbols from the Chinese city of Suzhou (蘇州) or the huama (禾算) numerals. These numerals are closely related to counting rods and the abacus (0 = 〇; 1 = 一; 2 = 二; 3 = 三; 4 = 四; 5 = 五; 6 = 六; 7 = 七; 8 = 八; 9 = 九; 10 = 十; 20 = 二十; 30 = 三十; 40 = 四十). The huama numerals in the Kaesong accounts are used to display prices in the capital and the goods markets.

In the huama system, special symbols are used for digits instead of the Chinese characters. The digits are positional. When written horizontally (as in Figure 4), the notation is written in four rows, left to right, top to bottom. For example:
• 亻 (interest rate % indicator)
• 々 (15, numerical value)
• 戈 (銭) (1/10) (order of magnitude; unit of measure is 餅 yang, as expressed in the entry)
• 式 (ratio)

The special numeric symbols 々 stand for 15. The order of magnitude is indicated by 戈 (銭). Order of magnitude consists of the characters 餅, 銭, 分 (denominations of cash meaning 1, 1/10, 1/100). The last character 式 means ratio. Here, the notation is 戈(銭) for 1/10, giving us a 1.5% interest rate (15 x 1/10). For row 5, the notation is 々 or the “interest rate [is] 75 x 1/10 [or 7.5%].”
Table 2. Journal (ilgi 日記) Page from 1887 Example also Takes the Role of a Trial Balance

| Debit (+) | Credit (-) |
|-----------|------------|
| Columns on page of 1887 Journal | Amount | Columns on page of 1887 Journal | Amount |
| 2 | $3,846.16 | 4 | $5,000.00 |
| 3 | $6,153.84 | 5 | $5,000.00 |
| 6 | $1,000.00 | 8 | $1,300.00 |
| 7 | $375.00 | 9 | $20.00 |
| 10 | $4,000.00 | 11 | $4,000.00 |
| 12 | $80.00 | 13 | $80.00 |
| 14 | $100.00 | 15 | $100.00 |
| 16 | currently remaining cash (時在文) | 55.00 |
| Sum | $15,555.00 | Sum | $15,555.00 |

Source: Pak Yong-jin Collection.
NB: Amounts in yang

An interesting aspect of Figure 1 is column 16 (last column on the left). Column 16 appears at the bottom of Table 1. Column 16 states the ‘currently remaining cash [時在文] is 55 yang (兩).’ ‘Currently remaining cash’ entries offer a running total and indicate ‘cash flow.’ A check of cash on hand usually occurred at the end of each odd page as the end product of a balance. Such a running total was useful to identify liquidity problems and is still a common practice among firms that trace their origins to Kaesŏng.

In Table 2, we render the original journal page into a “T” form, and we see that debit entries for cash are to the left side, and credit entries for cash are to the right side. Rows labelled 2 and 3 are the same as columns 2 (3,846.16 yang) and 3 (6,153.84 yang) from Figure 1, and they total 10,000 yang. This income is equalized by two credit entries of 5,000 yang each in the credit entries on the right side of Table 2 (rows labelled 4 and 5). In Figure 1, we can also see horizontal lines at the bottom of columns 2, 3, 4, and 5 that link them all together, identifying related counter-balancing transactions noted on the same day. Other columns are linked with similar lines, for example, Columns 10 and 11, 12 and 13, and 14 and 15, which were all related transactions, but columns 6 (1,000) and 7 (375), with columns 8 (1,300) and 9 (20), are not related counter-balancing transactions.

33 The Amore Pacific Beauty, Samjung Pulp, and Sindorico corporations all claim Kaesŏng origins and all practice daily trial balances to preserve the common business principle of operating “without resorting to outside capital” (mu ch’aeip kyŏngyo’ng, 無借入経営).
III.
When posting from the journal to the ledgers, the basic problem was to decide which transactions were to be posted to the Liabilities Ledger and which were to be posted to the Asset Ledger. Before following journal entries to ledgers, we want to examine the organization of transactions and the layout of entries on the ledgers’ pages: entries are grouped by “pigeonhole” or account and by date; there are closing lines and special terminology.

In the 1786 Liabilities Ledger in Figure 2, we can see transactions grouped by name.34 These names were creditor names,35 and all items concerning the same person were grouped together in a running account. Each name is headed by a special symbol that indicates an individual account. The journal has no such grouping symbol. The special symbol looks like a triangle (Δ), but in Figure 3, it looks like the hip-and-gable roof of a traditional Korean house or the Chinese character for the number eight (八).

Grouping of transactions by account has been identified by de Roover as the breakthrough to classification that allowed dual entries:

The great achievement of the Italian merchants, roughly between 1250 and 1400, was to fuse all these heterogeneous elements into an integrated system of classification in which the pigeonholes were called accounts and which rested on the principle of dual entries for all transactions.36

In Table 5 (“An example”), we can see journal entries (above) transferred to Ledger entries (below) and we can see the account sign (八) below in column A`. In column A of the journal in the upper part of the table, the entry commences with the date, but in column A’ of the Ledger in the lower part of the table, there is no date, only the symbol indicating account grouping or “pigeonholing.” Dating placed outside the entry can also be useful to group entries. Pacioli mentions numbering the pages of the Ledger and placing the date at the top in the margin.37 There are no page numbers in the Kaeso˘ng merchant’s Ledgers, but the date appears at the top of the page in the margin above each entry (Figure 2). Where there is no date, the date is taken to be the same as the previous entry.

Also, in Figures 2, 3, and 4, we can see double crossed lines.38 These lines indicate that all entries in the Ledger have been balanced and the Ledger closed. After closing the Ledgers, the final statement at the end of the year was drawn up, composed of a Financial Statement and an Income/Expenses statement. Now that

34 This page illustrates personal accounts, but the Ledgers also possess impersonal accounts such as a Purchasing Account (maedûk-ch’il 買得秩).
35 These creditors were suppliers to whom the Kaeso˘ng merchants owed money.
36 de Roover, “The Development of Accounting,” 117.
37 Pacioli, Treatise on Double-Entry Book-Keeping, 30.
38 Soranzo’s Ledger of 1422 in The State Archives of Venice displays cross lines, but Brown does not explain their meaning. Brown, A History of Accounting, 100.
Figure 2. The Liabilities Ledger (‘t’agup, 他給長冊) for the 3rd Month of 1786

Source: Academy of Social Sciences, Democratic People's Republic of Korea.

NB: There are seven accounts: Ku Kong-ch’ol (具公徹), Pak Kong-il (朴公一), Pak Kyong-pae (朴景培), Yu Yoon-myong (劉延明), Kim Min-pu (金敏夫), Pak Si-chung (朴矢仲), and Kong Kye-mun (孔季文).
Figure 3. The 1887 Liabilities Ledger (t'agup他給長冊) with the 1889 Entry

Source: Pak Yong-jin Collection.
NB: There are six accounts: Palgok-t’aek (鉢谷宅), Tang O-jo (當五條), O Kwang-on (五光彦), Pak Nam-ch’o˘l (朴南喆), Kim P’yö˘ng-hae ryöhyök (金平海麗爀), and Kong Cha-dong (公子洞).
Figure 4. The 1887 Assets Ledger (oesang 外上長冊) with the 1889 Entry

Source: Pak Yong-jin Collection.

NB: There are five accounts: O Kwang-ён (吴光彦), Kanggok-t’aek (康谷宅), Son T’oel-chong (孫德種), Chugyo-tojung (舟橋都中), shinch’aek (new book, 新冊), same, and same.
Figure 5. Page from the 1889 Journal (日記)

Source: Pak Yong-jin Collection.
we have surveyed the layout of information, let us consider terminology and the organization of entries.

In double-entry bookkeeping, the most important practice is to transfer items to the ledgers after having posted all items in the journal, and the key decision in posting entries to the ledgers is to distinguish between debit and credit items, because these will be recorded in different places. Once the distinctions have been made, then the entries can be posted in different ledgers. The Kaesŏng Ledgers externally identify themselves as Liabilities (泉水 changch’aêk, 他給長冊, Figures 2 and 3) or Assets Ledgers (oesang changch’aêk, 外上長冊, Figure 4), but internally, the entries themselves also indicate the difference. The differences are noted by the use of the terms ip (入) and nae (內). Ip, as stated above, meant an increase in liabilities and appears in the journal entries. The key distinction between a journal and a ledger is whether we see the term nae (內) or not. Nae meant ‘from this (total income or assets) take the following’ and indicated a dividing line (T-form) between debit and credit. Journals do not carry nae (內), only ledgers. But then, only the Liabilities Ledger linked both terms together: ip (入) ... nae (內), as in Figures 2 and 3 (Liabilities for 1786 and 1887/1889). The Asset Ledger carries no ip (入), only nae (內), as in Figure 4 (Assets for 1887). Tables 3 and 4 offer T-form examples of postings to the Liabilities Ledger and the Assets Ledger. Note the position of ip and nae in the Liability Ledger and only nae in the Asset Ledger.

Let us summarize at this point. A special symbol and special terms are found only in the Ledger, not in the Day Book-Journal. These are: 1) the symbol (∆ or 八) for “pigeonholing” or, in de Roover’s words, fusing “heterogeneous elements into an integrated system of classification” that identifies accounts; 2) the double, crossed lines indicating that the accounts have been finalized for asset valuation and income calculation; and 3) the special terms ip (入) ~ nae (內) for Liabilities and just nae (內) for Assets. These indicators of classification offer a grouping of like with like and the juxtaposition of opposites. The implicit meaning is that one group will be subtracted from the other. The Kaesŏng books offer these groupings at a glance to the eye.

Let us confirm the grouping of accounts with the 1887 Liabilities Ledger (Figure 3) and the 1887 Assets Ledger (Figure 4). There are six personal accounts on the Liabilities page and four personal accounts on the Assets page, with one, additional real account: shincha’ek (新冊, new book). Table 3 reduces the liability entries for only Palgok-t’aek from Figure 3 (first pigeonhole on right) to a T-form. Table 4 reduces the asset entries for only Chugyo-tojung from Figure 4 (fourth pigeonhole from right) to a T-form. These tables reveal a marked degree of uniformity: we can group items under appropriate headings; there is a bilateral

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39 “T-form” refers to the common accounting practice in modern times of recording account entries by drawing a ‘T’ on a page and placing debits on the left of the vertical line and credits on the right. If the sum of each side matches, then the accounts are said to be balanced.

40 de Roover, “The Development of Accounting,” 117.

41 Littleton emphasizes the importance of signs and terms that classify and group entries on the page. Littleton, “Pacioli and Modern Accounting,” 135.
Table 3. The Liabilities Ledger (tagūp 他給長冊) “T-Form” for Palgok-t’aek (鉢谷宅) from Figure 3

| Date         | Item                  | Amount      | Date         | Item       | Amount      |
|--------------|-----------------------|-------------|--------------|------------|-------------|
| 15/09/1890   | sum of expenses       | 3,868.48    | 15/08/1887   | principal  | 3,846.16    |
| 15/09/1890   | remaining             | 53,319.46   | 15/08/1887   | principal  | 6,153.84    |
|              |                       |             | 15/09/1889   | principal  | 12,544.00   |
|              |                       |             | 09/1889      | principal  | 18,816.00   |
|              |                       |             | 09/1889      | principal  | 6,724.90    |
|              | To (至) 08/1890       | sum interest|             | sum principal | 9,103.04   |
|              |                       |             |              | sum principal + interest | 48,084.90 |
| [57,187.94]  | Sum                   |             |              | Sum principal + interest | 57,187.94 |

Source: Pak Yong-jin Collection.

Table 4. The Assets Ledger (oesang 外上長冊) “T-Form” for Chugyo-tojung (舟橋都中) from Figure 4

| Date         | Item          | Amount | Date         | Item          | Amount     |
|--------------|---------------|--------|--------------|---------------|------------|
| 15/09/1889   | principal     | 12,544 | 15/09/[1889] | principal     | 40,084.9  |
| 09/1889      | principal + interest | 18,816 |             |               |            |
|              | principal + interest | 8,724.9 |             |               |            |
|              | 40,084.9      |        |              | 40,084.9      |            |

Source: Pak Yong-jin Collection.

form that recognizes positive and negative entries; and these entries balance and close.

IV.
Let us now follow entries from the journal to the ledgers. The first problem is to distinguish Liabilities from Assets in the journal. In the journal entries, the terms ip ~ sang (入 ~ 上) literally mean ‘coming in ~ positive (or plus).’ In fact, the
character for sang (上) probably originated from the operation of the abacus and originally meant ‘plus.’ The meaning of this pair is ‘should give;’ or ‘we have received X from Z, and we now owe Z the amount of X.’ The journal entries marked by ip ~ sang were integrated into a grouping of items (running account) under appropriate headings in the Liabilities Ledger or t'ag u˘p changch'aek (他給長冊). The term t'ag u˘p (‘liabilities’) can be translated literally as ‘[should] give to another.’

In the journal, ch'aegu˘p ~ ha literally means ‘out-going ~ negative (or minus),’ but their actual meaning is ‘should have,’ or ‘we have given X to Z, and Z now owes us the amount of X.’ As already noted, ch'aegu˘p indicates a debit and ha indicates a credit. These journal entries marked by ch'aegu˘p ~ ha, etc., were integrated into a grouping of items under appropriate headings in the Assets Ledger (oesang changch'aek, 外上長冊). The term oesang (‘assets’) can be translated literally as ‘[should] have from the outside.’

To provide a check on the accuracy or completeness of the ledgers, we have to confirm contra entries in two different ledgers. For the 1786 ledger, this is not possible, because the surviving records are not complete. The terminology and organization are identical to the 19th century ledgers, so we are confident that the earlier and later ledgers were organized in the same way. We have so far been able to prepare an analysis of entries from the 1880s, which do survive as a set of fully connected entries. Below, we present entries from the book labelled “1887” but the entry actually dates from 1889. It appears that the book was opened in 1887 and stayed in continuous use at least through 1889.

Pacioli wrote that each journal entry should appear as two entries in the ledgers, and that is why ledgers commonly have twice as many pages as journals. In transferring a journal entry into a ledger, A. C. Littleton found “four elements” in the journal entry that can be separated in the ledger. We can show that the Kaesŏng merchants held a similar concept of “four elements.” In fact, the concept of “four elements” is reflected in the name of the Kaesŏng method itself: the sagae Songdo chi ibubop or the ‘four-sided Kaesŏng ledger method.’

Let us now turn to connect entries in the journal with entries in the ledgers. As an example, we have chosen to track a sum of 12,544 yang received on 15.09.1889. In Figure 5, we can see its appearance in the journal (columns 1 and 2). Here, the same sum is recorded as received (debit to cash in column 1) and as transferred (credit to cash in column 2). The same sum appears in the Liabilities Ledger (Figure 3, indicated) and in the Assets ledger (Figure 4, indicated). Both ledger entries carry the same names and the same date as the entries in the journal.

In Table 5, we have transformed the vertical writing of the originals into a horizontal form. Here, we can see entries transferred from the 1887 journal (top, rows 1 and 2) to entries in the 1887 Assets Ledger and the 1887 Liabilities Ledger. Thus, we can find four inter-connecting or dovetail accounts as in the following.

42 Yamey, “Introduction,” 7.
43 Pacioli, Treatise on Double-Entry Book-Keeping, 31-32.
44 Littleton, “The Evolution of the Journal Entry,” 388.
### Table 5. An Example of How Journal Items are Transferred to the Ledgers

**1887 Journal (戊辰年八月旦目記第二吉辰)**

| Columns on page 18 of 1887 Day Book-Journal | A | B | C | D | E | F | G |
|---------------------------------------------|---|---|---|---|---|---|---|
| Date                                        | Date | Debtor / Creditor name | Credit / Debit indicator | Transaction | Type of money | Amount | Credit / Debit indicator |
| 1                                           | 日期 (15/09/1889) | Palgok-t`aek (鎮谷宅) | [ ] | 15/09/1889, P`igyo-t`aek received [loan with interest] beginning from the ninth month of [1889] of a principal sum of copper cash [from Palgok-t`aek] (皮橋宅移來己丙九月本葉鎭) | Cash (文) | 一萬二千五百四十四兩 (12,544 yang) |  |  |
| 2                                           | 日期 (15/09/1889) | Chugyo-tojung (舟橋都) | Debtor indicator | P`igyo-t`aek cash book transferred [loan with interest] beginning from the 9th month of [1889] of a principal sum of copper cash [to Chugyo-tojung] (皮橋宅冊移來己丙九月本葉鎭) | Cash (文) | 一萬二千五百四十四兩 (12,544 yang) |  |  |

**1887 Liabilities Ledger (光緒十三年丁亥八月 日記給終冊第二吉辰)**

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| Account Sign | Creditor name | Credit / Debit indicator | Transaction | Type of money | Amount |
| 1 | 八 | Palgok-t`aek (鎮谷宅) | ip (入) | 15/09/1889, P`igyo-t`aek [cash book] transferred [loan with interest] beginning from the 9th month of 1889 of a principal sum of copper cash (己丙九月十五日皮橋宅移來己丙九月本葉鎭) | Cash (文) | 一萬二千五百四十四兩 (12,544 yang) |

**1887 Asset Ledger (光緒十三年丁亥八月 日記上冊第二吉辰)**

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| Account Sign | Debtor name | Debtor indicator | Transaction | Type of money | Amount |
| 1 | 八 | Chugyo-tojung (舟橋都) | pong-ch`a (淅次) | 15/09/1889, P`igyo-t`aek cash book transferred [loan with interest] beginning from the 9th month of [1889] of a principal sum of copper cash [to Chugyo-tojung] (己丙九月十五日皮橋宅冊移來九月本葉鎭) | Cash (文) | 一萬二千五百四十四兩 (12,544 yang) |

Source: Pak Yong-jin Collection.

a) There are no page numbers in the original text. These have been added for analytical convenience.
b) Transactions from the 1887 book for 1889 are used here because the 1887 transactions are complicated by multiple credit entries.
The underlined entries correspond to each other and offer us evidence of the same transaction being recorded twice.

In the first Journal entry (or the top row, no. 1)
A) date
B) creditor's name (corresponds to Liabilities Ledger's creditor's name): Palgok-t'aeck
C) credit term ip (入) indicates the credit side in the ledger
D) transaction: cash book (received) and opening date for calculating interest
E) money indicator (cash)
F) amount: 12,544 yang
G) cash income term sang (上) (cash account debit side, which corresponds to the Liabilities Ledger credit side): ip (入)

In the second Journal entry (or the second row down, no. 2)
A) date
B) debtor's name (corresponds to Asset Ledger's debtor's name): Chugyo-tojung
C) debit term pongch'a (捧次) indicates the debit side in the ledger
D) transaction: cash book (paid out) and opening date for calculating interest
E) money indicator (cash)
F) amount: 12,544 yang
G) cash outgo term ha (下) (cash account credit side, which corresponds to the Asset Ledger debit side): pong-ch'a (捧次)

In the Liabilities Ledger, entry 1
A) account or “pigeonhole” symbol
B) from day book-journal entry 1: creditor's name: Palgok-t'aeck
C) credit term ip (入)
D) transaction: via a cash book and opening date for calculating interest
E) money indicator (cash)
F) amount: 12,544 yang

In the Asset Ledger, entry 1
A) account or “pigeonhole” symbol
B) from day book-journal entry 2: debtor's name: Chugyo-tojung
C) debit term pongch'a (捧次)
D) transaction: via a cash book and opening date for calculating interest
E) money indicator (cash)
F) amount: 12,544 yang
Table 6. Reception of Money (Journal)

From the Journal (Row 1 from Table 5):

“Date: 15/09/1889 (己丑九月十五日); Creditor’s name: Palgok-t’aek (鉢谷宅); Credit term: ip (入); Transaction description: P’igyo-t’aek received [a loan with interest] beginning from the 9th month of [1889] of a principal sum of copper cash [from Palgok-t’aek] (皮橋宅移來己丑九月本葉錢); Cash: 文; Amount: 12,544 yang (一萬二千五百四十四兩); Cash income as debit: Sang 上.”

| Palgok-t’aek (鉢谷宅) | P’igyo-t’aek (皮橋宅) |
|----------------------|----------------------|
| Debit                | Credit (Pacioli’s ‘A’) | Debit (Pacioli’s ‘Per’) | Credit |
| ip                   | sang                 | (12,544.00)            | (12,544.00) |
| (入)                 | (上)                 | Liability +            | Cash + |

Source: Pak Yong-jin Collection.

Table 7. Payment of Money (Journal)

From the Journal (Row 2 from Table 5):

“Date: 15/09/1889 (己丑九月十五日); Debtor’s name: Chugyo-tojung (舟橋都中); Debit Term: pong-ch’a (捧次); Transaction description: P’igyo-t’aek’s cash book transferred [a loan with interest] beginning from the 9th month of [1889] of a principal sum of copper cash [to Chugyo-tojung] (皮橋宅冊移來己丑九月本葉錢); Cash: 文; Amount: 12,544 yang (一萬二千五百四十四兩); Cash outgo (credit): ha (下).”

| Chugyo-tojung (舟橋都中) | P’igyo-t’aek (皮橋宅冊) |
|-----------------------|------------------------|
| Debit (Pacioli’s ‘Per’) | Credit | Debit | Credit (Pacioli’s ‘A’) |
| pong-ch’a             | ha                     |
| (捧次)                | (下)                   |
| (12,544.00)            | (12,544.00)           |
| Asset +               | Cash -                |

Source: Pak Yong-jin Collection.

In Table 6, we can see the four elements of the transaction translated from the journal in row 1 of Table 5: (1) Palgok-t’aek (鉢谷宅), by its position as the first name in the entry, gives the name of the account that ‘shall give’ (which is to be credited in Liability); (2) P’igyo-t’aek (皮橋宅), by its position as the second name in the entry, gives the name of the account that is to be debited in the cash book; (3) ip (入) may be regarded as the symbol of the entry in Palgok-t’aek’s credit-account; (4) sang (上) may be regarded as the symbol of the entry in P’igyo-t’aek’s debit-account. Ip and sang are the contra entries.

In Table 7, we can also see the four elements of the transaction translated from the journal in row 2 of Table 5: (1) Chugyo-tojung (舟橋都中), by its position first in the entry, gives the name of the account that receives the transfer (which is to be debited in Assets); (2) P’igyo-t’aek, by its position as second in the entry, gives the name of the account that is to be credited in the cash book; (3) pongcha (捧次) may be regarded as the symbol of the entry in Chugyo-tojung’s Asset Ledger; (4) ha
may be regarded as the symbol of the entry in P’igyo-t’aek’s credit side in the cash book. \textit{Pongch’a} and \textit{ha} are the contra entries.

The Korean method differs from that prescribed by Pacioli in at least two ways. Firstly, Pacioli prescribed ‘\textit{Per}’ (for debtor) and ‘\textit{A}’ (for creditor) inside one sentence, but this was something apparently sanctioned only by custom.\textsuperscript{45} The Kaesong accounts recorded debtors and creditors in separate entries. Nevertheless, a feature of the Kaesong method is the sophistication of terms that clearly separate information on the page and allow an easy sorting of postings from the journal to the ledgers. Secondly, there is no index or reference page at the beginning of the ledger and no pagination to facilitate reference to the accounts, but tracking was done by date and name.

The Korean method mirrors Pacioli in the two critical ways that define double-entry bookkeeping. Firstly, the journal entries record clearly the two aspects of one transaction. Secondly, each journal transaction was entered in the ledgers as two aspects of the same transaction, with the same amounts on opposite sides—for example, an amount was entered into the credit side of the Liabilities Ledger, and the same amount was entered into the debit side of the Assets Ledger.

\textbf{V.}

The Korean method for closing the ledgers was to create a Financial Statement (\textit{chu hoegye-ch’\-aek} 周會計冊) in which were posted the balances of all the remaining open accounts. The Financial Statement consisted of Accounts Payable (\textit{k”upch’a chil}, 給次秩), Accounts Receivable (\textit{pongch’a chil}, 捧次秩), \textit{chil} and Net Assets (\textit{y”omun}, 餘文), which was equal to Accounts Receivable minus Accounts Payable (Figure 6). Closing the accounts also included an Income and Expenses Account (\textit{hoegye ch’imjak ch’o}, 會計斟酌抄) (Figure 7).

Littleton tells us that European financial statements developed in two different forms. One form was a statement extracting summaries from double-entry accounts that was separated from the ledgers. The other form was a set of tabulations derived from sources other than double-entry accounts that was not separated from the ledger.\textsuperscript{46}

The Kaesong merchants compiled a Financial Statement that was clearly separated from the Ledgers. The Financial Statement in Figure 6 summarizes the double-entry accounts and reveals the final tabulations of the finances of the enterprise. The Korean practice of separating the Financial Statement from the Liabilities Ledger and the Assets Ledger is directly related to the settlement of accounts among the merchants engaged in ginseng investment (the \textit{tojung}, 部中, as in the Chugyo-tojung from Figure 4 and Table 4) and their agents (the \textit{ch’a-in}, 差人, or limited liability partners despatched to conduct business). In most other contexts, the \textit{tojung} referred to associations of merchants (\textit{e.g.}, Tongnae \textit{tojung} or

\textsuperscript{45} Littleton mentions no significance attached to the common usage of “\textit{Per}” and “\textit{A}.” Littleton, “Evolution of the Journal Entry,” 224.

\textsuperscript{46} Littleton, \textit{Accounting Evolution to 1900}, 123.
Figure 6. Fifth Financial Statement for 13th day, 9th Month, 1892

Accounts Receivable

- **Cash Account**: [Details]
- **Accounts receivable**: [Details]
- **isang or ‘the above-stated subtotal’**: [Details]

Accounts Payable

- **Accounts payable**: [Details]
- **Chil or the personification marker**: [Details]

Source: Pak Yong-jin Collection.
Figure 7. Income and Expenses Account

| Expenses | Income |
|----------|--------|
| 出 | 入 |
| ch'ul or 'expenses' 出 | ip or 'income' 入 |
| sangnap or 'tax payment' 上納 | nae or 'from this total' 内 |

Expenses

Income

Source: Pak Yongjin Collection.
the Tongnae merchants’ association), but in these books, the *tojung* refers to the ginseng field manager and relates primarily to those involved in the investment of capital for production. The principal purpose of this bookkeeping was to offer a periodic report of activities and thereby maintain trust among the merchants and between the merchants and their agents.

The matter of partnerships (*tojung*) and agents (*ch’‐a‐in*) raises questions about the existence of capitalism. It is quite beyond our consideration to judge whether “capitalism” existed in Kaeso˘ng, but R. A. Bryer has pointed out that, according to Marx, “capitalistic” behaviour was present “only when merchants pooled or ‘socialised’ their capital in partnerships and joint stock companies.” “Socialised” means that capital loses identification with an individual owner and becomes jointly held.47 We do not yet know enough about the *tojung* and *ch’‐a‐in* mentioned in these accounts to explain them in further detail, but they appear to be “socialising” their capital and acting as full and limited partners.

The term for Financial Statement consists of four characters: *chu* (周) means the given accounting period; *hoegye* (會計) indicates the summation of the calculations and records for the period; *ch’aek* (冊) literally means the binding of a book or the act of compiling. Within the Financial Statement, the key term is *chil* (秩), which was a standard suffix in Korean bookkeeping to indicate the personification of an account. *Chil* gives the accounts a personal identity and that identity is responsible to the merchants and completely independent of the material circumstances of his agent (*ch’‐a‐in*). Because of this abstraction, income shared between the merchant and his agents and expenses were absorbed by the firm and not held against the agents. In Figure 6, *chil* is the designator that marks the two accounts: Accounts Payable and Accounts Receivable.

There are other key terms that characterize the Financial Statement. In Figures 6 and 7 (or Tables 8 and 9), there is no pigeonhole symbol, because these are summary entries and not accounts. We also find slightly different terms that divide Accounts Payable and Accounts Receivable: *isang* (已上 or 以上) and *i* (以), which also appear in accounting books from academic institutions. *Isang* means the ‘above stated subtotal’ and *i* means ‘take this.’ *Isang* and *i* are symbols akin to *nae* (內) that indicate the division between Accounts Payable (credits) and Accounts Receivable (debits), producing a Korean T-form (Table 8).48

The right-hand side of Figure 6 shows the Accounts Payable (*kapch’a chil*, 給次秩) or the Liabilities Account or everything that the proprietor was obligated to pay on the 15th day of the 9th month of 1892. The left-hand side shows the assets as the Accounts Receivable (*pongch’a chil*, 捧次秩) or everything that was owed to the proprietor. The last entry in the Accounts Receivable refers to the ‘currently remaining cash’ (*shijaemun*, 時在文) of 35.48 yang. The entry for the ‘currently remaining cash’ in Figure 6 is marked by *chil* and has the heading ‘Accounts Payable’ (Table 8).

47 Bryer, “The history,” 137 and 137n15.

48 The 8th century Silla census record in the Japanese Shōsōin archive (“Shiragi no sonraku monjo” 新羅の村落文書) uses *yi* and an 18th century agricultural cooperative record (“Yonghagi,” 用下記) uses only *nae*, but the Kaeso˘ng records use both.
### Table 8. Financial Statement (周會計冊) in a “T-Form” Balance Sheet
(Accounts Payable, Accounts Receivable, and Net Assets)

| Debit Accounts Receivable: 掙次秩 | Balance Account | Amount   |
|----------------------------------|-----------------|----------|
| O Kwang'ŏn (吳光彦)              | 13,844.00       |
| Hong Chong'yŏl (洪鍾烈)          | 1,838.00        |
| Yun Kyŏngbaek tojung [Commenda](尹敬伯都中) | 12,917.00  |
| Chin Chun'gyŏng short term loan (秦俊卿間債) | 50,000.00     |
| Pack Kiock short term loan (朴寄玉間債) | 7,000.00       |
| Yi Yŏng'guk short term loan (李榮國間債) | 5,000.00       |
| Yun Yonggwŏn short term loan (尹永源間債) | 5,000.00       |
| Pak Kwang'ok short term loan (朴光玉間債) | 5,000.00       |
| Pak Kŏjae Kunsam short term loan (朴巨濟君三間債) | 4,000.00       |
| Currently remaining cash (時在文) | 35.48           |
| Subtotal (已上)                  | 104,634.48      |

| Debit Accounts Receivable: 掙次秩 | Balance Account | Amount   |
|----------------------------------|-----------------|----------|
| Palgok-t'aek (鉢谷宅)            | 53,221.59       |
| Pak Namch'ŏl (朴南喆)            | 2,344.47        |
| Pak Hŭngch'ŏl (朴興喆)           | 113.40          |
| Kong Chadong (公子洞)            | 629.49          |
| Sŭng Hadong (承洞洞)             | 783.18          |
| Shinch'aek (新冊)                | 23,563.54       |
| Examination cost (科費條)         | 20,000.00       |
| O Sŏngt'aek (午星宅)             | 383.64          |
| P'yŏng Kyo't'aek (兵橋宅)         | 311.77          |
| Palgoknae-t'aek (鉢谷內宅)        | 145.47          |
| Wang Yongsu (王龍洙)             | 627.25          |
| Chin Yonggwŏn (秦永源)           | 1,092.60        |
| Subtotal (已上)                  | 103,216.40      |
| Net assets (餘文)                | 1,418.08        |

Source: Pak Yong-jin Collection.

### Table 9. Income and Expenses Account (會計斟酌抄) in a “T-Form”
Net gains = Income – Expenses

| Dr: Expenditure (ch'ul 出) | Amount   |
|----------------------------|----------|
| Wage cost (役條文)          | 2,000.00 |
| Tillage cost (日畊價)       | 3,487.50 |
| Tax cost (上納條文)          | 6,200.00 |
| Wild ginseng and deer antlers (山蔘鹿茸價) | 3,170.00 |
| Unknown details of expenditure (未詳文) | 5.04 |
| Total expenditure (ch’ulhap 出合) | 14,862.54 |

| Cr: Income (ip 入) | Amount   |
|--------------------|----------|
| Interest Received (邊條餘文) | 13,751.21 |
| Interest Received by merchants’ association (tojung, 都中利條文) | 2,000.00 |
| Overseas Cotton Sale income (洋木利文) | 187.02 |
| Handling commission for promissory note issued by Seoul merchants (京換駄價) | 342.39 |
| Total income (iphap 入合) | 16,280.62 |

Source: Pak Yong-jin Collection.
remaining cash’ always appears at the end of the assets and indicates that the Kaesöng merchants kept a positive cash flow to ‘avoid resorting to outside capital’ (mu ch’äip kyôngyo˘ng, 無借入經營). The debits list for Accounts Receivable has a subtotal (marked by isang ... i) after the Cash Account. This is followed by the Net Assets (yömun, 餘文) entry as the last item on the left before a vertical line that marks the end. Yömun includes three sources of income: from financial transactions (interest), from sales, and from investment (e. g., ginseng development). The Net Assets entry is imported from the Income and Expenses Account (noted there as ‘Net gains’). The difference between the two subtotals was the Net Assets amount, the purpose of the bookkeeping when the proprietor assesses his income and expenses.

Here, the difference is 1418.08 yang in income over expenses.

Figure 7 shows the Income and Expenses Account. The first two characters of the title (hoegye, 會計) simply mean ‘account.’ The second two characters (ch’imjak, 斟酌) describe a situation where a revenue or expense is not realized at the same moment in time. The term recognizes a promise to pay or an expectation to receive money or a service in the future and means ‘estimate’ in modern Korean. The final character (ch’o, 抄) ordinarily means ‘copy out,’ but here it means ‘balance report for an annual meeting.’ The entire statement includes inventory and property capitalization in an accrual-based system. The Income and Expenses Account is clearly a nominal account, because it summarizes expenditures and gains over time, in contrast to a balance sheet that reports on real accounts at a particular moment in time.49

Pacioli did not describe a Financial Statement but ended the closing process when the goods and expense accounts had been closed into the income and expenses account and the latter into the capital account. The final statements by Kaesöng merchants closed accounts and summarized information in both real and nominal accounts to achieve succinct clarity regarding income and expenses.

VI.
Was this Korean method derived from Chinese or Japanese examples? Our discussion relies primarily on studies in English on Chinese50 and Japanese51 practices prior to the adoption of European bookkeeping. Although cursory, we are able to show that there was a “Korean” style that differed from Chinese and Japanese styles.

Nishikawa asserts that the Dutch taught double-entry at Dejima in Nagasaki to Japanese students and Dutch books on accounting can be found in

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49 Perhaps the real motive for this nominal statement was to show tax payments (sangnap, 上納) as indicated in the fifth column from the left. Kaesöng merchants may have composed these statements simply for tax purposes and then swore their authenticity before a commission to demonstrate tax payments. Littleton hypothesizes that many statements were made up for tax purposes even in the Middle Ages. Littleton, Accounting Evolution to 1900, 136.

50 Gardella, “Squaring Accounts,” 1992; and Aiken and Lu, “The Evolution of Bookkeeping in China,” 1998.

51 Someya, Japanese Accounting, 1996; Nishikawa, “The early history,” 1956; and Nisikawa, “The accounting inheritance,” 1994.
the Nabeshima and Shizuoka collections, but the technique was not adopted in Japan until after the Meiji Restoration of 1868. Nisikawa argues that there was no double-entry bookkeeping in Japan before that time, but that there was “double calculation,” which, he argues, amounted to the same thing. Ogura explains that the daifukuchō (大福帳) commercial ledger (ca. 1750) of the Nakai Clan had dual entries but lacked matching debit and credit entries. Someya also writes of the entry of “Western-style double-entry notation” 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.” Despite having a forward and futures market for hedging in the Dōjima rice market in Osaka at least from 1730, no double-entry accounts with matching credit-debit entries have come to light in Japan. We suspect that complex accounts will eventually be brought to light, but the lack of empirical studies is a handicap to any comparison. In looking for complex accounts, one might try the books kept by the Tsushima islanders of Japan recording their trade with Korea. One might assume that sophisticated accounting is necessary for foreign trade, but Tsushima accounts were kept in a single-entry style (balance forwarded minus expenditures plus receipts), probably because the trade with Korea was, for the most part, conducted with fixed prices, and the entire trade was loosely monopolised by the lord of Tsushima. The method and terminology used in the Tsushima accounts differed considerably from most bookkeeping methods in Korea.

In China, at least by Ming times, the ‘four columns system’ (sizhufa 四柱法) existed as a single-entry system for state accounting and consisted of balance forwarded (guan 管), new receipts (shou 收), outlays (chu 除), and present balance (zai 在). The ‘four columns system’ established a set of terms and principles and preceded more sophisticated double-entry accounts, such as the ‘three footed

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52 Nishikawa, “The early history,” 381.
53 Nisikawa, “The accounting inheritance,” 192. McKinnon, “The historical and social context,” 184 also argues that the system was effectively the same.
54 Ogura, “The Nakai Family’s Bookkeeping System,” 150; also K. Someya, Japanese Accounting, 12. See Ogura, “The Nakai Family’s Bookkeeping System,” 149-50 for a description.
55 Someya, Japanese Accounting, 18.
56 Someya, Japanese Accounting, 11.
57 Schaede, “Forwards and Futures,” 487, and Wakita, “The formation of rational expectations,” 1995, for details.
58 Lewis, Frontier Contact, 86-101.
59 Weber mentions the general absence of accounts of any kind for trade that was fixed or was conducted by a “family.” See Weber, General economic history, 223-25.
60 Gardella, “Bookkeeping and Rationalism in China,” 323. Goody asserts that “a similar system was in operation in Korea in the 11th or 12th century” (79), but Gardella makes no such claim and Goody supplies no empirical evidence. We demonstrated that a cooperative society in 18th century Korea used a similar system in their real (commodity) accounts, but that these accounts also linked together in a simple double-entry system. The form is similar, but the terminology and principles differ as explained below. See Jun and Lewis, “Accounting Techniques in Korea,” 2006. The accounts examined in this paper are both real and nominal. While they share basic principles with those from the cooperative society, they are far more sophisticated and are entirely double entry.
account (sanjiaozhang 三脚帳), developed from the late Ming. The ‘three footed’ system recorded every transaction twice, once as ‘incoming’ (lai 來) and once as ‘outgoing’ (qu 去). Incoming entries were more commonly called ‘receipts’ (shou 收), and outgoing entries were labelled ‘payments’ (fu 付). Incoming entries were posted to the top half of an account book page and outgoing entries to the lower half of the same page, and this bisected page format became the standard Chinese style. Further refinements appeared from the late Ming on with the more well-known ‘dragon gate’ system (longmenzhang 龍門帳), which Gardella calls “an indigenous double-entry accounting system” that handled ‘receipts’ (jin 進), ‘expenses’ (jiao 繳), ‘assets’ (cun 存), and ‘liabilities’ (gai 該). The longmenzhang system retained a split-page format with receipts on top and payments on bottom, but it innovated by creating three books: “a journal for initial recording, a ledger for daily double-entry posting, and a ledger for categorising accounts.”

Gardella’s discussion stops here, but Aiken and Lu go on to mention a more “mature” system called the ‘four-feet’ (sijiaozhang 四脚帳) or ‘Heaven and Earth Matching’ (Tian Di He Zhang 天地合帳) system that appeared beginning around 1750. The ‘three footed account,’ ‘dragon gate,’ and ‘four feet’ double-entry systems all bisected pages and recorded information using the method of incoming above and outgoing below.

A superficial difference between the Chinese and Korean systems is the technical terminology. Certain terms are common to both Korea and China, and at least one term is common between Korea and Japan (nae, 内, indicating a deduction). Nevertheless, there are important terms that differ from known Chinese or Japanese cases: receipt, disbursement, and the titles for journal and ledgers. In addition, although Koreans used Chinese characters, these characters often had peculiar Korean pronunciations, because they actually referred to

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61 The description here generally comes from Gardella, “Squaring Accounts” but also see Aiken and Lu, “The Evolution of Bookkeeping in China,” 149ff.
62 Gardella, “Squaring Accounts,” 324.
63 Gardella, “Squaring Accounts,” 324. Aiken and Lu translate these terms differently: jin is ‘receipt,’ jiao is ‘payment,’ cun is ‘keeping,’ and gai is ‘owing,’ although they later refer to ‘assets’ and ‘liabilities’ for cun and gai. Aiken and Lu, “The Evolution of Bookkeeping in China,” 150-51.
64 Gardella, “Squaring Accounts,” 324. Aiken and Lu call the journal cao liu (草流), they call the ledger for daily double-entry posting xi liu (細流), and they call the ledger for categorising accounts zong qing (總淸). Aiken and Lu, “The Evolution of Bookkeeping in China,” 150.
65 Aiken and Lu, “The Evolution of Bookkeeping in China,” 154.
66 The Chinese terminology is most clearly shown in Aiken and Lu, “The Evolution of Bookkeeping in China,” 152.
67 Mun (文) for ‘cash,’ changhak (長冊) for ‘ledger,’ and yung (兩), as a counter for units of metallic money. The Kaesong books also use a numeral system devised in the Chinese city of Suzhou, or the huōmā numerals. See note a) in Table 1.
68 Chinese shou—ru or lai (收—入 or 来); Korean ip—sang (入—上).
69 Chinese fu—qu (付—去); Korean taegó—ha (貸去—하) or ch‘aegüp—ha (債給—하) or pongch‘a—ha (捧次—하).
70 Chinese xi liu (細流) and Chinese zong qing (總淸); Korean oesang (外上), and t‘agu (他給).
native words. The use of Chinese characters in this fashion produced a mixture of Chinese and Korean words in a “Koreanized syntax and morphology” called idu (吏讀). For example, chamun (尺文, memorandum), which should be read ch'okmun in Sino-Korean pronunciation, or patcha (捧上, receipt), which should be read pongsang, or pønjil (反作, fraud), which should be read panjak. The variant readings indicate underlying native Korean terms that have borrowed the Chinese characters for their general semantic meanings, phonological similarity, or merely as place-holders, an ancient and widespread practice among Koreans and Japanese.

There are two fundamental differences that mark out the Korean style that we will examine here, as well as a third difference that we are exploring in another study. The first and second differences relate to form. Firstly, the page layout is the most striking. The Chinese ‘three footed,’ ‘dragon gate,’ and ‘four feet’ styles use one or two horizontal lines to bisect the page with ‘receipts’ (jin 进) and ‘owing’ (or ‘liabilities’ gai 該) on top and ‘payments’ (or ‘expenses’ jiao 繳) and ‘keeping’ (or ‘assets’ cun 存) on the bottom. This arrangement was carried over into the later Tian Di He Zhang income and expenses statement in which the top and the bottom halves were balanced. The Kaesŏng system does not bisect pages but lists receipts and payments sequentially in the Journal and separates liabilities and assets into two separate ledgers.

The second major difference is the separation of assets and liabilities into two distinct ledgers. The Chinese system relied on three books: a journal, a ledger for double-entry posting with detail, or as Aiken and Lu state, “general, cash and purchasing and selling journals” (emphasis added), and a ledger that further categorised accounts, or in Aiken and Lu’s words, “receivables and payables, purchasing and selling and other ledgers” (emphasis added). Although Gardella refers to the second book (xi liu) as a ‘ledger,’ Aiken and Lu call this a “journal.” The Chinese terminology employed suggests that it was merely a more detailed journal, leaving only the third book as a ledger that contained receipts and liabilities on the top of the page and assets and expenses on the bottom. The Kaesŏng system also relied on three books: one journal and two ledgers (liabilities and assets), but because the Korean system did not bisect pages, it did not have assets and liabilities listed in the same ledger. The Korean system is more akin to the Italian style with

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72 Lee and Ramsey, The Korean Language, 54.
73 For example, see the ‘Orok pyŏn chungsŏl pu idok pangŏn yakkkanja (語錄辨證說 附吏讀方言若干字),’ ‘Munja (文字),’ ‘Shimunp’yŏn/ nonmullyu (詩文篇/論文類),’ in the Ojuyo˘n munjang cho˘nsango (五洲衍文長箋散稿), a 19th century encyclopaedia by Yi Kyugyong (李圭景), 1788-1863. Yi notes that the characters 尺文 have a special reading of chamun, and they mean a “personal promise for payment contracted between two individuals.” He glosses the meaning with the word used today for ‘cheque’ (sup’yo, 手標).
74 “[The ‘dragon gate’ system] follows the usual form for the Chinese ledger in which Sou appears on the top of the paper and Fu on the bottom.” Aiken and Lu, “The Evolution of Bookkeeping in China,” 151.
75 Aiken and Lu, “The Evolution of Bookkeeping in China,” 155.
76 Aiken and Lu, “The Evolution of Bookkeeping in China,” 154.
77 Gardella, “Squaring Accounts,” 324. Aiken and Lu, “The Evolution of Bookkeeping in China,” 152.
different colored books containing different information. The third significant difference is the theory behind the accounts. There are similarities to the Chinese style and differences. Aiken and Lu regard the underlying theoretical difference between the Chinese and Italian styles to have been the presence of personification in the Italian system and its absence in the Chinese system. We found personification in the commodity accounts of an 18th century Korean cooperative society, and personification is common in government accounts that treat different branches of the government as accounting entities. The Korean term that marked accounts as separate entities was *chil* (秩), and we find these in the Kaesŏng accounts (Figure 6). Aiken and Lu state that the Chinese accounts did not carry personification either, because “classification is based on the results of activities, not on the transaction contents.” Rather than personification, the “underlying theory” of the Chinese style focuses on cash flow, and the “basic principle of Chinese double-entry bookkeeping is that cash inflows should be equal to cash (silver) outflows.” The Chinese books did not personify accounts, because the Chinese books are focused on a cash box at the center of the accounts.

The centrality of the cash box was also shared by the Kaesŏng accounts. But, while the Kaesŏng accounts listed cash accounts (borrowing and lending like a bank) with trading accounts (buying and selling commodities), they also recorded long-term investment accounts as well. Yang Chŏng-p’il dates the conversion of commercial capital to productive, investment capital from late 18th century. Cash accounts and trading accounts marked with pigeonholes (△) could be closed and were marked as such with crossed lines as in Figures 2, 3, and 4. But there are account entries that were not closed, and those pages do not have crossed lines, because those accounts were related to investments. Those accounts were closed later, after cash balances were taken, and so the system incorporated accrual methods, which are not mentioned by Pacioli and appear to be absent in the Chinese accounts.

In sum, a single entry in the Kaesŏng journals became two separate entries in separate ledgers. Although cash flow was noted, the main concern

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78 Goody, The East in the West, 59.
79 Jun and Lewis, “Accounting Techniques in Korea.” This characteristic, together with selected cross-listing of transactions between personified accounts, indicates that even the accounts of a rural cooperative were more than merely single-entry accounts. For an example of a typical government account that uses nominal accounts marked by *chil*, see Kijŏn Kaesŏng Yŏngi'yo.
80 Aiken and Lu, “The Evolution of Bookkeeping in China,” 151 and 156.
81 Aiken and Lu, “The Evolution of Bookkeeping in China,” 150.
82 Aiken and Lu, “The Evolution of Bookkeeping in China,” 158. Hsu Tzu-fen examined the books of the Sheng Tai Hao Company, a Chinese firm in Nagasaki operating from early Meiji until 1946 (extant records: 1936-1943), and describes the bottom-top arrangement of (sou-fu). He concludes that the Sheng Tai Hao books were single-entry. Hsu, “Chŏbo o tšùjite,” 1983, 495, 497.
83 Aiken and Lu, “The Evolution of Bookkeeping in China,” 158.
84 Hyŏn, Silyong chasu, 7.
85 Yang, “19 segi,” 28-29.
was the content of the transaction, which could have been cash lending, trading commodities, or long-term investment that required accrual accounting methods. The account entries were marked accordingly. The Kaesŏng accounts differ both superficially and fundamentally from Chinese practices and even more so from Japanese single-entry methods, but they have numerous similarities with Korean commodity accounts that were kept in a single-entry system that carried double-entry features.

VII.
If the Kaesŏng accounts present a Korean style distinct from China and Japan, what do they tell us about commercial society during the late Chosŏn Kingdom (ca. 1750-1900)? We should mention two matters. The first is the rhetoric of the accounts. Aside from the objectivity exuded by the rational structure of the accounts, why do we find an expression of piety? The other matter is a description of the social context of the accounts, or who were the merchants who created these accounts?

The accounts offer both the technical information described above and certain rhetorical devices to go beyond description of financial information to inspire trust. The accounts balance, “look factual, objective, and neutral,” but there is more. There is an overt expression of religiosity in the documents, clearly invoked to provide benefits and invoke trust. Frater Lucas Pacioli argued that there is an inseparable link between honest book-keeping and faithful religiosity. God’s name “must appear at the beginning of every manuscript.” Accounts sworn before God are trustworthy, and thereby the merchant’s and his colleagues’ minds are put at ease. Benedetto Cotrugli’s 1573 Della mercatura et del mercante perfetto (Of Trading and the Perfect Trader) was also imbued with the religiosity of the times. Cotrugli, a wool merchant in Naples, writes that the first folio of the ledger should carry the name of God and that the merchant should intone a prayer. For Europeans to draw on religious ethics to govern their search for income should not surprise us, but there was a similar injunction to draw on the ethics of Heaven among the merchants of Kaesŏng, probably with the same intent: to be mindful of accuracy, produce trust, achieve peace of mind, and rhetorically convince the reader of the accuracy of the accounts.

The Kaesŏng merchant books consistently begin with an invocation of Heaven (ch'ŏn'ansang kilchin, 天恩上吉辰). Figure 8 shows the cover of a sample liabilities ledger from 1821 with this phrase displayed in the lower right. In

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86 Carruthers and Espeland, “Accounting for Rationality,” 35-36 and 36n9.
87 Pacioli, Treatise on Double-Entry Book-Keeping, 4.
88 Pacioli, Treatise on Double-Entry Book-Keeping, 2.
89 Kataoka, The First Manuscript in the World, 7.
90 The 1715 assets accounts of the Merchants’ House of Glasgow opened with “In the name of God, Amen,” Brown, A History of Accounting, 70. Nicolaus Petri (Amsterdam 1588) wrote a treatise on book-keeping in which his ledger closes with the statement, “Thus is this my book balanced and compared, wherefor to the almighty and eternal God be all praise, honour and glory. Amen.” Brown, A History of Accounting, 134.
Confucian Korea, Heaven was not anthropomorphized, but it was the source of all ethics, the final arbiter of virtue, and it was incumbent upon men to discipline their hearts to conform with Heaven’s will, otherwise society and even the natural world would go awry. If we examine the invocation, the intention becomes clear: ch’ŏn (天) means Heaven and u ˘n (恩) means blessing, grace, mercy, benevolence; sang (上) acts as the verb ‘to offer up’ or to tick up, as in calculating income on an abacus; kil (吉) is a good or lucky omen or sign; and chin (辰) refers to the sexagenary designation of a particular day, so the overall meaning is: “by the grace of Heaven, may [these days] accrue good fortune.” We suspect that the Korean invocation of Heaven was not just a talisman of good fortune, a mere superstitious utterance, or a cynical attempt to invoke divine authority and convince a reader. All these meanings were there, but the invocation also carried the implicit meaning of an oath made before Heaven attesting to the accuracy of the accounts as well as an attempt to gain Heaven’s blessing.

Trust is the bedrock of any partnership. When the sedentary Kaesŏng

91 The philosophical discussion comparing Confucianism with Christianity is old and diverse. Tu Wei-ming is a leading figure in interpreting Confucianism to Western audiences, and he has argued that individual, self-aware Confucianists seek to perfect themselves ethically by obeying the dictates of Heaven, but “... although Heaven is omnipresent and may be omniscient, it is certainly not omnipotent ... “Tu, “Embodying the Universe,” 185. We thank Mr. Javier Cha for bringing this point to our attention. For a discussion of the impact of Confucianism in general on Chinese accounting, see Bloom and Solotko, “Confucianism in Chinese and Japanese accounting,” 28-34.

92 The same was true in European accounts from medieval times through the 18th century. See Carruthers and Espeland, “Accounting for Rationality,” 41.
merchants (tojung 都中 as in “Chugyo-tojung” from Figure 4 and Table 4) dispatched their mobile agents (ch‘a-in 差人) to conduct business, they seemed to need more than legal sanction or the threat of social exclusion to enforce honesty. The merchants already had access to their agents’ desire for accumulation, but they wanted to enlist the agents’ value system, and that was probably one purpose of the invocation. In sum, the rhetoric of the accounts had multiple audiences: merchants, their partners, and Heaven. Regulation was never imposed by the state, so the state was never a target audience.

But, who were these merchants and who were their agents? How did they operate and what sort of business did they conduct? What was their relative size? We should examine these questions in turn beginning with a description of their organization.

The Kaesŏng merchant culture goes back to the early Koryŏ period (918-1170) when the new king Wang Kŏn built his capital in Kaesŏng and the kingdom conducted extensive trade with Chinese, Jurchen, Khitan, and Arab traders. Many have argued that the double-entry method described here dates from that time, but there is no evidence to substantiate this claim. We only have similar terms, but we do not have detailed examples.93 Our interest therefore focuses on the main businesses that appear in the books—money-lending, ginseng trading, and the financing of ginseng production. We discussed money-lending above, but now we turn to trading and production.

Ginseng has appeared in East Asian pharmacography for millennia, praised for its restorative and aphrodisiac qualities. Wild ginseng has a long growth period and even cultivated ginseng takes four (white ginseng) to six (red ginseng) years to mature. Korea, Manchuria, North America, and Siberia were traditionally abundant in wild ginseng.

Although procuring wild ginseng is an ancient practice, a debate has been going on since the 1970s among historians regarding the beginning of the cultivation of ginseng in Korea. Some have argued that cultivation began in the mid-18th century and others around the end of the 17th and beginning of the 18th centuries. Wild ginseng is rare and difficult to find, but cultivated ginseng can be grown, harvested, processed, and sold in quantities. The evidence pointing to the development of cultivated ginseng from around 1700 appears to be stronger than for the later dates. The strongest bit of evidence suggesting widespread cultivation is the spike in export and extreme demand from China and Japan at the end of the 17th and beginning of the 18th centuries. For example, after importing large quantities of ginseng in exchange for large quantities of silver from the early to mid 16th century, in 1721, at the behest of the shōgun who sought import substitution, Tsushima island authorities secretly obtained living ginseng plants that they passed on to the bakufu. These plants were probably cultivated plants, and they helped to

93 Ho, Hŭng-sik, “Koryŏ sidae,” 109.
create a domestic Japanese ginseng industry.\textsuperscript{94}

The most potent cultivated variety is red ginseng, which is considered a stimulant to male sexual function, hence the demand. It is steam cured at 100° C. As early as 1607, the Korean government forbade the boiling of ginseng, a technique then imported from China, but by 1707, the Korean term for red ginseng (\textit{hongsam} 紅蔘) was common.\textsuperscript{95} Despite the ban in 1607, the production of red ginseng seems to have become widespread over the 17\textsuperscript{th} century, and this implies increased availability of the root through cultivation. A fabrication facility for boiling ginseng (\textit{chungp'o-so} 煮包所) was first established on the banks of the Han River outside Seoul but this moved to Kaesong in 1810, back to Seoul in 1824, and then almost immediately back to Kaesong, where it stayed.\textsuperscript{96} Kaesong had always been a trading center for ginseng, but from the early 19\textsuperscript{th} century it also became the manufacturing center.

Thus, domestic and foreign demand for ginseng gave rise to several developments: intense cultivation, an expansion in the number of merchants, and a regional spread to their activities. The ginseng trade spanned most of the northern territory of Korea and connected the northwest Chinese border with the southeast trade with Japan in Pusan. The Kaesong merchants sat astride the main transport artery between these two points. Merchants, both licensed and illegal, collected ginseng from the most important growing area (Kanggye, 江界), which is not close to Kaesong, but lies about 340 km. due north up in the mountains of what was then Py'ongan Province (today's Chagang Province). The far north of old Py'ongan Province bordered China along the length of the Yalu River. Licensed merchants paid taxes and could enter the area to obtain wild ginseng for the capital and export markets.\textsuperscript{97} Smugglers operated in the same area and supplied demand south to the Japan House in Pusan, or north to the markets in the northwest along the Chinese border. Although smuggling was a capital offense, merchants even smuggled themselves into China with the regular Korean embassies so that they could sell directly to the Chinese.\textsuperscript{98} Kaesong merchants were deeply involved in both legal and illegal forms of trade. O Sŏng mentions Kim Ch'anggyu (金昌奎), who travelled to China with a regular Korean embassy and was discovered selling ginseng at Shanhaiguan (山海關), the eastern pass of the Great Wall, where it terminates at the Yellow Sea.\textsuperscript{99} The Korean government wanted to control smuggling to prevent a domestic deficiency (even royals had difficulties obtaining ginseng), to keep prices from rising, and to stop the shrinkage of revenues from the ginseng taxes collected in the harvesting area as well as at the market in the Japan

\textsuperscript{94} O Sŏng, “Chosŏn hugi,” 83-85.
\textsuperscript{95} O Sŏng, “Chosŏn hugi,” 84.
\textsuperscript{96} Imamura, Ninjin-shi, vol. 2, 406.
\textsuperscript{97} O Sŏng, “Chosŏn hugi,” 61-73.
\textsuperscript{98} O Sŏng, “Chosŏn hugi,” 71 and 76-77.
\textsuperscript{99} O Sŏng, “Chosŏn hugi,” 81.
House in Pusan. Despite the intention of the Korean court, the apparent success of cultivation by 1700 in combination with the high foreign demand resulted in a large expansion of smugglers who enjoyed the connivance of local officials and peasants in the mountains of north Pyŏng‘an Province, who crossed into China for harvesting, and who enjoyed the active participation of Korean interpreters at the Japan House in Pusan.

If the geographic range of their trade can be known, what do we know of the relative size of their business? From the mid-19th century, the volumes of their production and transactions became enormous. Production of cultivated ginseng around Kaeso˘ng really began from 1797, but amounts were small at first: 120 kŭn in 1797 (36 kg.), and 200 kŭn in 1811 (60 kg.), but this soared to 40,000 kŭn by 1847 (12,000 kg.). The scale of ginseng cultivation around Kaesŏng grew rapidly. Land area under cultivation is hard to determine, but production was calculated in terms of one site (p’o圃) with planted rows of production called kan間. From 1797 to 1810, there may have been around 1,000 kan under cultivation, which grew to 10,000 kan by 1820 and 150,000 kan by 1840. A document from late 1896 that records volumes of production in Kaesŏng indicates totals to over 51,000 kŭn (15,300 kg.) of ginseng. This amount must have been an astounding increase over earlier periods. For example, in all of 1720, only 563 kŭn (168.9 kg.) of ginseng was officially sold in the Japanese markets of Edo, Osaka, and Kyoto, and nearly all of this ginseng originated in Korea in exchange for silver. No prices are quoted in the 1896 record, but prices from earlier centuries can give some indication of the values involved. Prices climbed radically from the early 18th century to the early 19th century. In 1734, 149 yang bought 1 kŭn of premium ginseng, but by 1752, the price had risen to 240 yang, to 489 yang by 1759, to 672 yang by 1780, and to an astounding 1,280 yang by 1802. In 1896, the 51,000 kŭn mentioned above would have been worth 65,280,000 yang in 1802 prices, an unimaginable sum.

100 O Sŏng, “Chosŏn hugi,” 72-73.
101 O Sŏng, “Chosŏn hugi,” 81-83.
102 Normally a kŭn is 600 grams for most commodities, but for dried ginseng, the weight was 300 grams per kŭn.
103 Hong, “17 segi,” 32 and Yang, “19 segi,” 32. See also Yang, “19 segi,” for an outline of the beginning of production around Kaesŏng in the early 19th century.
104 Yang, “19 segi,” 34.
105 Kaeso˘ng chosam sŏngch’aek. Following 1896, we also have export volumes for red ginseng.

| Year | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 |
|------|------|------|------|------|------|------|
| volume | 45087 | 23178 | 63310 | 18431 | 69901 | 83182 |

Data Sources: Kyŏngsŏng yŏngsagwŏn pogo (京城領事館報告), “Han’guk sacho˘ ng” (韓國事情), in T’ongsang hwich’ an (通商彙纂), vol. 17, 24. Yang, “Ku˘ ndae Kaeso˘ ng,” 80.

106 Tashiro Kazui “Tōkai Yakkanshi no mitsu bōeki,” 49.
107 Source for prices: Kanggye-bu úpchi, samjŏng (参政), 227-234. Prices (價) are recorded only for the following years:

1734 (貯蔘一兩 = 錢9兩3錢 or 1 錢 = 9.3 錢 或 1 斤 = 148 錢 yang 8 錢);
1752 (體蔘一兩 = 錢1兩5錢 or 1 斤 = 240 錢, 尾蔘一兩 = 錢6錢 or 1 斤 = 96 錢);
How much of this trade did the Kaesŏng merchants control? An absolute answer to this question is difficult, but it is commonly considered that Kaesŏng controlled the vast majority of ginseng trade and production in Korea. The merchants themselves handled significant fortunes. For example, if we look to the annual balance sheet we examined above, we can see two representative accounts identified by individual names. The smallest account was for 113 yang and the largest for 53,221 yang. By comparison, the total budget for the Kaesŏng County government in 1894 was 89,786 yang, of which the tax revenue from ginseng was 14,409 yang (16%). In other words, one annual account in one of the books for one merchant was 59% of the local government's budget.

We still do not know a great deal about the population of Kaesŏng and the role of merchants in local society. The general outline is clear, though. Kaesŏng was the capital of the Koryŏ dynasty until the 1390s, when a new government moved the capital south to what is now modern-day Seoul. In Kaesŏng society, three groups dominated: political elites, Buddhist elites, and merchants. In the move to Seoul and the creation of a new dynasty, the Buddhists were expelled completely and the merchants were stigmatized and marginalized, leaving the political elite in control. However, there remained in Kaesŏng both a loyalist element to the old dynasty and the merchants.

We have little data on the number of merchants in Kaesŏng before modern times. Befitting a capital city for the Koryŏ dynasty (918-1392), the population was quite large and may have numbered 100,000 households or 400,000 to 500,000 people. Of course, the population followed the political authority to the new capital in the 1390s, and the number of households shrank to barely over 6,000 or about 24,000 people, if we assume four people in each household. In 1756, the population was 34,285 people. In 1780, it was 38,873. In 1801, the population was 40,377. As mentioned above, in 1900, 52 percent of household heads declared “commerce” as their occupation, while only 23.4 percent of household heads in Seoul claimed to be engaged in commerce. In short, the merchants were left in Kaesŏng, and they developed their own society. Commonly, boys, beginning at age ten, studied commerce, while girls learned weaving. Kaesŏng society was different from most of parts of Korea. It was commercially advanced, financially

1759 (體蔘1錢[ 돈 ] = 錢3兩或1 斤 = 480兩); 1776 (尾蔘1錢[돈] = 錢2兩1錢或1 斤 = 336兩); 1780 (體蔘1錢[돈] = 錢4兩2錢或1 斤 = 672兩; 尾蔘1錢[돈] = 錢2兩8錢5分或1 斤 = 456兩); 1802 (參1兩 = 錢80兩或1 錢[돈] = 8兩或1 斤 = 1,280兩).

Kijŏn Kaesoŭng Yŏngsarye, 767.

The Koryŏ government established five sectors of the city with each sector possessing some 20,000 households or 400,000 people if each household had four people.

110 Songdo-chi, 1782 (4.4b-2.5a), 50.
111 Songdo sokchi, 1802 (2.4a), 170.
112 Oh, “Economic status,” 32.
113 Oh, “Economic status,” 33.
114 Songdo-chi, 1648 (39a), 22.
sophisticated, and internationally connected.

VIII.
In this article, we have investigated a re-discovered cache of records preserved in the Democratic People's Republic of Korea and have compared them with similar books preserved in the Republic of Korea. These accounting books that reach back to 1786 offer opportunities to analyze Korean methods before any western impact could be felt. The elegant arrangement of interlocking accounts comprehends personal, real, and nominal accounts. The system ‘pigeonholes’ information into personal accounts and offers statements on “cash flow.”

The Kaesŏng double-entry method was one that managed complex commercial transactions, although it is possible that the principles were adapted from Chinese methods. The surviving form uses Chinese characters in an idiosyncratic Korean transcription system that indicates an underlying, native, Korean term. Usage occasionally contravenes the Chinese character’s semantic meaning, and this is why we take the system to be distinctively Korean. We do not know how or from where it arose, and we do not yet know its larger significance to the societies of Koryŏ or Chosŏn Korea. Werner Sombart and Max Weber held up double-entry bookkeeping as the key technology that allowed a “rationalistic pursuit of unlimited profits,” which itself led to the creation of “capitalism.” A double-entry system was certainly used in early-modern Korea, but it did not reflect a society embarking on capitalism. The Kaesŏng merchants were money-lenders and traders, and they simply used a rational method of arranging their accounts to handle a valuable and easily traded luxury commodity. Our case presented here offers a comparative study for debates on the European case. Judging from the technical consistencies over the century from 1786 to 1892 and similar terminology used from the 18th century by non-profit societies, the method was probably widespread.

While having much in common with Pacioli’s method—the double-entry method—the accounts also carry a strong ethical dimension. Pacioli’s world was Christian, and European accounts were sworn before God to ensure their accuracy. Korea was Confucian with popular undertones of Buddhism, and the accounts were created with Heaven as a witness to attest to accuracy and help preserve trust between partners. The connections among Logos, Ethos, and Praxis animated Pacioli’s times just as they did pre-modern Korea and remind us of a world in which Heaven was the moral fount and was ever-present in the minds of men as they went about their business. Heaven was invoked for rhetorical effect but also for the blessings and good fortune it could bestow.

115 Yamey, “Scientific Bookkeeping,” 99.
116 See also Yamey, “Accounting and the Rise of Capitalism,” 1964; Winjum, “Accounting and the Rise of Capitalism,” 1971; Yamey, “The Historical Significance,” 2005; Aho, Confession and Bookkeeping, 2005; and Derks, “Religion, capitalism and the rise of double-entry book-keeping,” 2008. Yamey, Aho, and Derks have recently revisited the Sombart-Weber proposition of a close relationship among capitalism, double-entry bookkeeping, and religion and have reached contradictory conclusions.
Finally, then, what is the significance of double-entry bookkeeping for Korean society in the 18th century? Does double-entry bookkeeping indicate that capitalism was alive and well in Kaesŏng? Does it indicate the presence of the “modern fact” or the reification of numbers?117 The Kaesŏng practice does indicate commercial sophistication when societal discourses were dominated by the ideal of self-sufficient villages. Complex financial arrangements were in place, money was being lent out for speculative reasons (often to finance ginseng plantations), accounts were produced for efficiency and rhetorical purposes, and partnerships, or “socialised” capital, existed. Although 18th century Korean society was dominated by an anti-commercial Neo-Confucian ideology, that did not stop peasants from selling their surplus food and manufactures in the markets, nor did it stop the Kaesŏng merchants from trading, banking, and investing. The economic world was varied, and we still have only a few glimpses of that world. Social investment (schools, shrines, welfare, and insurance), as seen in the accounts of agricultural cooperatives, might characterise a “Confucian moral economy,”118 but the Kaesŏng accounts lack any mention of these activities. They refer to hiring labour and reveal money-lending for speculative and commercial purposes, and they point to the existence of complex commercial and financial markets in 18th century Korea.119 In short, Kaesŏng merchants had an effective technology to monitor complex financial activities, and they partook of a world view that can be called “capitalist,” even if their society was far from capitalism.

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117 Poovey, *A History of the Modern Fact*, 29.

118 Jun and Lewis, 58-60.

119 Hong, “17 segi,” 35, concludes that capitalist relations existed because management of the ginseng production leased land and employed wage labour.
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