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Traditions and innovations: An exploration of the governance structure, business strategy and historical development of the Chinese Shanxi piaohao, 1820s to 1930s

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Abstract

This dissertation examines the Chinese Shanxi piaohao, arguably the most important Chinese indigenous financial institutions in the nineteenth century, which emerged in one particular province. Concentrating on their governance structure, business strategy, and historical development, my thesis explores the emergence, growth and decline of the piaohao, and asks how they solved the commitment problem and developed their business by means of modern economists' tools, such as path dependency and the principal agent model. This study uses a wealth of micro-economic data, which, although published, had not been digitized and properly analysed before.

My work reveals that the emergence of the Shanxi piaohao shows reactive sequence path dependence. In a situation which gave little protection to shareholders' capital, it imposed a highly centralized management structure, and a tenure- and performance-based incentive structure to discipline distant employees. Moreover, through establishing a widespread branch network, providing services to a wide range of clients, inventing various types of draft, and pricing remittance fees on diverse factors, the Shanxi piaohao were soon successful and controlled the Chinese remittance market for many decades.

However, as it expanded and as China's social and business environment became more unpredictable, the piaohao's head managers reached the limits of their competence and its centralized management structure began to show diminishing returns. High financial leverage and a narrowed profits margin also indicated the hidden risks to the piaohao. When the 1911 Revolution broke out and ended China's last feudal dynasty, many piaohao branches encountered immense losses from looting, bad loans and deposit withdrawals. It was during this time that modern Chinese banks and foreign banks penetrated the Chinese remittance market and poached the piaohao's staff. Because the piaohao shareholders shared unlimited liabilities, when these threats materialized, many of them went bankrupt, while others turned to investments elsewhere and abandoned the piaohao.

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Notes to the reader

Currencies and exchange rates

Tls. stands for Tael (liang 两) which is a Chinese ounce. Before 1935, the silver tael, copper coin, and coined silver dollar were the most commonly used methods of payment in the Qing Dynasty. Copper coins and silver dollars are measured in counted units with 'wen' and 'yuan' as the base unit, while the silver tael is measured as a unit of weight with 'tael' (Tls, hereafter) as the base unit. In general, Tls. 1 = 40 gram = 1,000 wen = 1.5 yuan.

Foreign languages and dates

Chinese names and places in English in this dissertation are given generally not in Wade-Giles but in Hanyu Pinyin, except where the former occurs in contemporary news of account.

All dates before October 1911 conform to the Chinese lunar calendar.

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Prologue: Setting the scene

“A group of Shanxi piaohao merchants have arrived at Beijing recently and visited the Financial Minister Zhou Ziqi. The purpose of this business trip is to ask the government for help to maintain their business. The Minister highly praises the piaohao’s great contribution to the country’s financial activities for a long time, and expresses his sincere wish to help the piaohao in its current difficulties. However, because detailed arrangements need to be settled, the Minister has promised that he will try his best to negotiate with others.”

*—‘Shanxi merchants have arrived at Beijing for the government bailout’,
Shenbao Newspaper [申报], 22rd March 1914 (Huang, 2002a p.507.).*

The above news report is one of the last remaining pieces of information about the Shanxi piaohao; after this, they disappeared collectively from the Chinese financial market, leaving numerous stories, legends and studies about their history. As a descendant of a Shanxi merchant, I explore in this dissertation, based on new archival findings and economic models, the mythical and controversial history of the Shanxi piaohao with detailed and comprehensive analyses.

Introduction

In 1823, in a small town in Shanxi, a remote inland province of China, there emerged a firm named Ri Sheng Chang [RSC, hereafter]. The name combines Ri [Sun 日], Sheng [rise 升], and Chang [prosperity 昌]. For the first time we see a firm naming itself a piaohao [票号], which means a business enterprise [hao 号] that specialises in transmitting drafts [piao 票]. Following this, a group of piaohao sprang up in three towns in the same province, Pingyao, Qixian and Taigu, which quickly opened branches all over China. As China’s first financial intermediaries specialising in remittances, these Shanxi piaohao for decades played an important role in the Chinese financial market. However, in the early 20th century, almost a hundred years after the first Shanxi piaohao was set up, their whole system collapsed and the piaohao disappeared from history.

Before the Shanxi piaohao were established, there was no financial intermediary who specialized in remittances.¹ Networks of trade and markets drew support from various financial institutions which all provided different functions. At the national level, there were native banks [qianzhuang 钱庄]² and credit-debt bureaux [zhangju 账局]³ carrying out deposit and loan functions and issuing silver notes [yinpiao 银票] for local circulation. In rural areas, pawnshops issued small loans against a variety of collateral, with about 25,000 establishments throughout China and an average of approximately 10 establishments in each county (Ma, 2011 p.17.) Merchants would ship silver in convoy to cover large interregional transactions, and would use silver notes to clear intra-city transactions (Huang, 2002b pp.5-10.).⁴

After the 1760s, China's commercial and trade activities boomed.⁵ A thriving international and domestic trade increased the demand for inter-provincial silver

¹ "As early as the Tang dynasty (618-907AD), merchants could travel around the country without carrying metal cash but with a paper proof of ownership called flying money [feiqian 飞钱]. Unlike the later drafts, which were issued by merchants, flying money was issued by the government to solve the problem of carrying copper coinage rather than of settling payment. Moreover, the policy of flying money lasted only for the short period of ten years", in *山西票号史 (A history of the Shanxi Piaohao)*, Jianhui Huang, (修订本, 山西经济出版社 (Revised Edition, Shanxi Economic Press)), 2002b, p.12.

² Native banks, amounting to 15,000 operated mainly in the Yangzi Delta region in the late Qing era.上海市地方志办公室 [Shanghai Local Chronicles]
<<http://www.shtong.gov.cn/node2/node2247/node4578/node79494/node79515/userobject1ai103895.html>>, accessed 7th May 2012.

³ "Credit-debt bureaux were set up in northern China and run mainly by Shanxi merchants. It has been estimated that about 273 credit-debt bureaux were operating in the cities of Beijing and Tianjin in the early nineteenth century", in Huang, *A history of the Shanxi Piaohao*, p.14.

⁴ "The earliest drafts used for commercial settlement in China date back to 1683, but they began on a very small scale and only between acquaintances", in Huang, *A history of the Shanxi Piaohao*, p.14.

⁵ "China's international trade can be divided into seaborne and land trade. It has been estimated that in the sixty years between 1760-4 and 1820-4 the seaborne export trade increased from Tls. 4 million to Tls. 15 million per annum. In the same period, the total import and export trade on land rose from Tls. 713,000 to Tls. 10 million," in *中国近代经济史统计资料选辑 (Selections of Modern Chinese Economic History Statistics)*, Zhongping Yan, (科学出版社 (Science Press)), p.45. Although there are no reliable statistics for domestic trade in the period, an increase in export/import trade would have driven an increase in the domestic trade.

shipping.⁶ However, at the same time the spread of bandits and refugees from famine often stole silver en route, and it was in this situation that the Shanxi piaohao was established to meet the ever increasing demand for remittances.⁷

During their existence, the Shanxi piaohao made a great contribution to the Chinese economy. By remitting and advancing hundreds of millions of taels of commercial, government, and private funds, these piaohao not only supplied the need for a Chinese remittance market but also accelerated the flow of commodities, alleviated government financial constraints, and enabled ordinary people to transfer money.⁸ As an important part of the Chinese financial sector, the Shanxi piaohao was in its growth provoked as well as restrained by the Chinese political and economic environment. Therefore, an examination of the Shanxi piaohao could increase our understanding of Chinese economic history in this era.

Besides their contribution to the economy, the significance of the Shanxi piaohao also lies in the unique trajectory of their development. As native-born financial institutions, the piaohao developed with their own business strategies and wisdom, inherited from a century of business experience. During their existence, they over-depend on neither the government nor foreign banks, and therefore their growths to some degree reflect the achievements and destinies of typical Chinese merchants at the time.

⁶ “China’s insurance industry started in the 1840s when the British set up insurance schemes as a sideline of trade. Before this, no insurance company could insure traders against silver shipping loss”, in *中国保险史* (*A history of China's insurance industry*), 中国保险史编委会 (Editorial committee of a history of China's insurance industry), (中国金融出版社 (China Finance Publishing House)), 1998.

⁷ Under the peaceful Qing, China’s population doubled from 150 million in 1650 to 300 million in 1800. A greatly increased population and fragmented landholding resulted in massive numbers of famine refugees (Ebrey 1981). At the turn of the nineteenth century, the White Lotus Rebellion [白莲教起义] (1794-1804) occurred in northern China, and the Tenrikyo Religion Rebellion [天理教起义] (1812/3) disrupted the Zhili, Shandong and Henan provinces

⁸ Before the Shanxi piaohao emerged, ordinary folk could rely only on acquaintances to convey their money to relatives living at a distance, in Huang, *A history of the Shanxi Piaohao*, p.36.

In addition, the Shanxi piaohao are also important for understanding how a traditional Chinese merchant group solved the principal/agent problem in a legal context, avoiding expensive court fees and the weak enforcement of judicial decisions. By designing formal and informal rules and constraints, they successfully disciplined and incentivised faraway employees to begin with, but failed to modify this governance structure when the organisation expanded and conditions drastically changed.

Although the Shanxi piaohao is important in China's economic history, no systematic and comprehensive study has so far been written. Until the primary sources became accessible, studies were handicapped by scattered qualitative documents or patchy balance sheets. Undoubtedly, drawing on analyses of such sketchy sources led to conflicting or inconsistent arguments. However, the present dissertation, based on a wealth of micro-economic data together with economic models as analytical tools, explores more confidently the development of the Shanxi piaohao.

This dissertation hypothesises that a firm's performance depends on its governance structure and business strategy; on this basis it proposes the following two big questions:

1. How did the piaohao merchants solve the agency problem in their long distance business?
2. What business strategy did they adopt in order to control the remittance market and how did they change over time?

In this and the next six chapters this thesis seeks to address these questions. Chapter 1 outlines the historical background of the Shanxi piaohao, including their position in China's financial market, historical development and ways of doing business. The next two chapters focus on the piaohao's governance structure. Chapter 2 examines its management structure and Chapter 3 studies the internal incentive structure. They show that, by imposing a centralized vertical and a horizontal collective punishment management structure, the piaohao merchants successfully overcame the problem of commitment. Moreover, a tenure- as well as performance-based incentive structure motivated employees to be loyal and work hard. Using the RSC piaohao as a case study, Chapter 4 focuses with statistics on the piaohao's business strategy, i.e. its type

of client and draft and the factors determining remittance commissions. Chapter 5 scrutinizes the dynamic change of the piaohao's government business, business volume, income/expense structure and profits. Before drawing conclusions, Chapter 6 attempts to explain the decline of the piaohao by focusing on the impact of the 1911 Revolution and the expansion at the time of foreign and modern Chinese banks.⁹

Drawing from extensive primary sources with economic tools, this dissertation makes an original contribution by developing a unique data set and incorporating economic models and quantitative analyses in the study of the Shanxi piaohao. My work places the governance structure of the Shanxi piaohao in the theoretical context of the theory of the firm and reveals how the piaohao could manage a widespread branch network over distance to protect shareholders' capital at a time when legal sanctions were weak. Using quantitative techniques, this dissertation also takes the opportunity to examine the Shanxi piaohao's business strategy for the first time and shows how the piaohao overcame various obstacles and expanded its business.

Moreover, based on my data set, this dissertation completes the statistics of the Shanxi piaohao, i.e. the annual business volumes, incomes and profits. This provides the available literature with reliable quantitative references for scrutinising the growth of the piaohao. Just as important, my thesis illustrates the decline of the Shanxi piaohao by comparing it with its rivals, the modern Chinese banks and foreign banks. This innovative study is important for understanding Chinese economic history and business history in general, and provides a comparative perspective from which to assess the differences between Chinese and foreign financial institutions.

Data and sources

Most of the primary and secondary sources of the Shanxi piaohao are published or preserved in one of the following three places: an archival book 'Archival materials of the Shanxi piaohao [Shanxi piaohao shiliao 山西票号史料] (Huang, 2002a)', the

⁹ The 1911 Revolution was the uprising which ended the Chinese imperial system and established a republican government in China.

University of Tokyo, and private collections. The piaohao's sources in my thesis are also from these places.

Data collection for piaohao scholars is a challenging task. This is because many of the Shanxi piaohao business records were either destroyed or lost in endless military and political turmoil after their decline in the 1910s. Therefore, piaohao scholars before the 1990s could undertake their studies only on the basis of rare patches of evidence and two illustrated books published during the Republic era (1912-49).¹⁰

In the 1990s, under the sponsorship of the People's Bank of China Shanxi provincial branch, the piaohao materials were eventually made available to scholars. After ten years' hard work, these scholars had gathered almost all the available piaohao materials scattered in China and published an archival book 'Archival materials of the Shanxi piaohao' (edited by Huang, 2002a).

This archival book contains 1,300 pages of piaohao documents and can be divided into three main parts. The first part provides records of the Shanxi piaohao's historical developments compiled chronologically. Not only does it contain comprehensive official documents, i.e. government archives, official memorandums and local gazetteers to provide a government perspective on the piaohao's history, it also reproduces substantial public and private reports, such as journals and newspaper articles of its time to illustrate the piaohao's operations over time.

The second part is a collection of documents related to the institutional arrangements and business of the piaohao. The sources for this section are rather diverse. Some come from contracts, regulations, codes, or lists of payments to the piaohao. Other documents are from the oral recollections of people who were once employees of the piaohao, or their descendants. It also includes epitaphs of famous piaohao merchants, foreign embassies' reports and foreign scholars' descriptions at the time. The third part of the book includes business correspondence, ledgers, wage and lists of dividend distributions left by the RSC, Wei Tai Hou (WTH, hereafter), and Bao Feng Long

¹⁰ These two books are: 山西票庄考略 [A general study on the Shanxi piaohao] (Chen, 1937) and 山西票号史 [A history of the Shanxi piaohao] (Wei, 1944).

(BFL, hereafter) piaohao. Among them, those left by the RSC are the most comprehensive, consisting of more than 200 pages. These letters cover the period from the 1840s to the 1900s and comprise correspondence between the twenty branches and their head office in Pingyao.

The primary sources from this book used by my thesis appear in several forms. First, this book preserves and my thesis constructs an extensive data set based on more than 1,200 business letters showing the RSC and WTH daily's operations in the 1840s, '50s, '60s '90s and 1900s. The information contained in this data set covers 'the places where their drafts were used', with 'the names of the clients', 'the amounts and types of the silver they dealt in', 'and 'the fees they charged', etc.

Moreover, in examining the piaohao's relationship with the government, official memorandums and government archives in this book not only enable me to study the interactions between the piaohao merchants and the government, but also allow me to construct annual statistics on the Shanxi piaohao's government business.

Besides, the piaohao's institutional arrangement and governance structure, contracts, regulation codes, payroll and lists of dividend distribution preserved in the book are crucial for the theoretical framework developed in this study. Oral recollections and epitaphs are valuable in showing individual-level earnings profile for analysis.

However, it should be mentioned here that, since this book has collected almost all the available piaohao documents dispersed in China, some of them may contain misleading or even inaccurate sources. For example, when recording the piaohao business, this book (Huang, 2002a p.742.) extracts descriptions from Chen (1937), who asserted that most of the Shanxi piaohao's business sources came from the Qing court. However, the later studies, i.e. Liu (2007) and my thesis (2.2) refute this argument by estimating the piaohao's government business. Moreover, when collecting piaohao payment lists, this book uses a Japanese work entitled *An Overview of the Commerce in China* [Qingguo Shangye Zongan 清国商业总览] which stated that the monthly payment for piaohao employees varied from Tls. 6 to Tls. 24 (Huang, 2002a p.565.). However, from the piaohao's payroll lists, I have identified that it was the annual payment rather than the monthly payment that had

this value (Huang, 2002a p.605.). Since all these mistakes occurred in the secondary sources of the book, I have in referring them been critical about using them.

In addition, because this archival book has been available for more than ten years, during which time a museum on Shanxi merchants [Jinshang Bowuguan 晋商博物馆] was established in Beijing and a private collector Li Jinzhang published a book on the Shanxi merchants' ledgers [Jinshang Laozhang 晋商老账] (Li, 2012), in December 2012, I went back to Shanxi and Beijing to do field work. Most of the documents exhibited in the museum were about the Shanxi merchants trade in the Ming and early Qing eras and were not for open public use, and Li's collections also focus on Shanxi merchant's trade, the most valuable primary source I collected during this field trip was a selection of the Shanxi piaohao business letters from Dr. Wang Yonghong of the Shanxi Social Science Academy. These letters have been used in compiling my piaohao business data set for the thesis.

As the thesis notes, besides the archival book and private collections, the Shanxi piaohao's documents are also preserved at the Advanced Library of Asia Studies, University of Tokyo; therefore, I collected primary sources from this library also. The library preserves two selections relating to the piaohao's business correspondence, fourteen account books of the RSC, twelve of the WTH, two of the Zhong Xing He (ZXH, hereafter), five of the Yuan Feng Jiu (YFJ, hereafter) and two of the Ri Xin Zhong (RXZ, hereafter) piaohao. The two selections of piaohao's business correspondence have been published by Hamashita (Hamashita, 1990, Hamashita, 2004) and have been encoded into my dataset, on account of the research scope of this study; for this reason, I have collected the fourteen account books of the RSC piaohao.

On the basis of these account books, I have compiled one monthly and thirteen annual balance sheets of different RSC branches in the 1840s, '50s, '60s '90s and 1900s to study the piaohao's business, income, and expenses structures over time. Since these 900-sheet account books contain comprehensive daily transactions of the RSC, they have not only enabled me to study the piaohao's book-keeping methods in detail, but

have also shown me changes in the piaohao's business, income and expenses structures over time.

A review of the literature

Discussions about the Shanxi piaohaos became popular soon after their decline in the 1910s. Early researchers focused on narratives of their history (Li, 1917, Chen, 1937, Wei, 1944, Tamagna, 1942, Yang, 1930, Wagel, 1915), which provided valuable information on the way in which these piaohao emerged, developed and declined. Among them, Wagel (1915) and Tamagna (1942) praised the Shanxi piaohao as the first financial institutions in China to have introduced a system of remittances, and maintained that the fall of the piaohao was chiefly due to competition from foreign banks. Li (1917) and Chen (1937) attributed the success and failure of the piaohao to their arrangements for dealing with personnel.¹¹ According to these authors, the piaohao's cultural beliefs in brotherhood and loyalty promoted their success but when they faced competition from foreign and modern banks, inaction on the part of the head office managers accelerated their decline.

However, after 1945, a period of political turmoil and social unrest ensued in China forcing the study of the Shanxi piaohao to be called off for almost forty years, and it was not until the 1980s that scholars once again were able to think about research on this subject. Compared with the previous writers, studies after the 1980s bring up more primary sources and their histories of the Shanxi piaohao concentrate more on the piaohao's relationship with the Qing government (Kong, 1984, Zhang, 1989, Deng, 1997, Shi, 1994). For example, Kong (1984) claimed that the course of the piaohao is and inextricably linked with the Qing court through government remittances. With the end of the Qing regime in 1911; when the piaohao lost this business umbrella, it declined. This claim soon led to criticism. Zhang (1989) proposed that, since the Shanxi piaohao's government remittance persisted for long in

¹¹ Besides the personnel arrangements, Chen (1937) also proposed that advances in public transport enabled people to carry currency more easily, and therefore, reduced the demand for the piaohaos' services. Moreover, as the piaohao absorbed deposits from northern China and lent them out in the south, when the 1911 Revolution occurred and southern China declared independence, many loans in the south turned bad, and deposits in the north were withdrawn.

only a few provinces, its growth should not be explained by its relationship with the government.¹² Shi (1994) suggested that the piaohao's vigorous growth should be attributed to the rapid growth of China's trade volume rather than its relationship with the government.¹³

The release of the book 'Archival materials of the Shanxi piaohao' in 2002 brought a series of quantitative analyses of the piaohao. Li (2005) examined the share of piaohao business brought by each type of client,¹⁴ Qiao (2006) studied the employees' levels of expertise,¹⁵ Liu (2007) examined the piaohao's business volumes,¹⁶ and Yan (2008) estimated their total profits.¹⁷ Moreover, based on qualitative materials contained in the Archival Book, i.e. official memorandums, a body of literature elaborated the growth of the piaohao from a historical perspective (Faure, 2005, Faure, 2006, Jang, 2006, Wang, 2014, Song, 2006). Faure (2005) and Wang (2014) held similar views that the reason for the piaohao's decline may have been that their capital power could not meet the financial reform requirements of the Qing government, which were gradually distributed elsewhere. Jang (2006) and Song (2006) contended

¹² Zhang (1989, pp.98-100) explained that provinces such as Fujian, Guangdong, Zhejiang and Sichuan continued to remit government funds after the 1860s when the Taiping Rebellion was suppressed, while the remaining provinces ceased to deal in government remittances and delivered government funds by conventional silver shipping. However, in his analyses Zhang (1989) fails to consider that many provinces after the 1890s resumed government remittances in order to pay indemnities for the First Sino-Japanese War (1894/5).

¹³ Shi (1994) examined the number and paid up capital of newly established factories, as well as China's import and export figures from 1895 to 1913 to reach his conclusions.

¹⁴ Li (2005) estimated the piaohao's business structures in 1823-61, 1862-93 and 1894-1911 and found 90% of the business were from commercial sectors and 10% was the government.

¹⁵ Qiao (2006) examined the dividends payment lists of Da De Tong and Xie Cheng Qian discovered that about 30%-40% employees could receive expertise shares.

¹⁶ Liu (2007) estimated Shanxi piaohaos' annual business volumes in the 1850s, 1870s and 1900s and found that they rose from Tls. 46 million in the 1850s to Tls. 118 million in the 1870s and peaked at Tls. 466 million in the 1900s.

¹⁷ According to Yan's estimates (Yan 2008), the annual profits of all the Shanxi piaohao increased from Tls. 0.46 million in the 1850s to Tls. 1 million in the 1870s, reached a peak of Tls. 2 million in the 1900s and only then began to suffer deficits.

with each other on whether the decline of the piaohao should be blamed on the Chinese currency reforms which began in 1907.¹⁸

In addition to surveys from a historical point of view, other studies applying economic tools to the same subject started from 2002. Employing organizational theory (Jensen, 1998), Morck and Yang (2002) studied the relationship between the piaohao shareholders and head office managers, and praised it as a dual-class equity structure that prevented insider fraud and raised the piaohao to empire-wide success.¹⁹ Yang (2002) modified an efficiency wage model designed by Greif (1994) and applied it to the piaohao's collective punishment mechanism, arguing that this mechanism doomed them to failure.²⁰ Putting the piaohao's institutional arrangements into a theoretical framework of institutional change (North, 1990), Liu (2005) showed how the informal and formal rules and regulations promoted the piaohao's growth at first but endangered them later.²¹

Zhou (2008) considered the piaohao's incentive structure and argued that, although this incentive structure was effective initially, they declined when the piaohao

¹⁸ Jang (2006) argued that the piaohao earned substantial profits by handling the inter-city exchange of silver taels which differed in weight and purity. As the currency reforms began in 1907, the silver taels were gradually replaced by coined silver dollars of fixed silver weight and purity; hence the profits made by the Shanxi piaohao shrank rapidly and it declined. However, Song (2006) refuted this argument and maintained that the more complex a currency is, the greater the transaction costs of trading. Thus, a uniform currency would lower transaction costs and therefore encourage trade, which in turn would promote the remittance business. The real reason for the piaohao's decline was their limited working capital and competition from the other institutions.

¹⁹ Morck and Yang (2002) claimed that giving piaohao head office managers expertise in stocks incentivised them to maximize value for shareholders. Limiting those managers' rights in daily business operations avoided the risk of managers' having sufficient stakes to affect decisions on employment policy.

²⁰ Yang (2002) found that under a collective punishment mechanism the piaohao lacked the incentive to design a mechanism for reducing one-off gains by fraud. Therefore, with the expansion of the business compounded with a changing environment, managers' one-off frauds increased, and the multilateral punishment mechanism became ineffective when such gains exceeded an honest manager's lifetime income.

²¹ Liu (2005) argued that the piaohao was established on a nexus of formal and informal institutional arrangements. At first, these arrangements coordinated well with each other in regulating employees. However, with the changing environment, the inadaptability of the original formal institution arrangements emerged, causing potential danger to the Shanxi piaohao.

merchants failed to adjust this incentive structure to suit the changed environment.²² Yan (2012) designed a simplified game theory model and specified that, under a collective punishment mechanism, it is only when managers feel extremely pessimistic about the prospects for the piaohao that they cheat; otherwise, they will remain honest.

The above studies form the core literature which applies modern economic models to analyse the institutional arrangements of the Shanxi piaohao. As well as research based on economic theories, some documents also focus on describing the piaohao managers' career paths (Chen, 2011), or comparing its incentive structure with that of the European family business enterprises (Lou, 2007),²³ which are intriguing for the present dissertation.

My contribution to the existing literature

After critically examining the literature on the Shanxi piaohao, my thesis identifies the following issues, which the previous research did not focus on. First and foremost, the small amount of data resulted in no systematic and precise quantitative analyses on the piaohao business which in turn raised long unsolved controversial arguments. For example, when refuting Kong's claims (1984) on the piaohao's intimate relationship with the government, neither Zhang (1989) nor Shi (1994) could put forward strong enough proof of the size of the governmental and commercial share in the piaohao's total business. In consequence, many mainland China scholars (Wang,

²² Zhou (2008) compared the governance structure of the Shanxi merchant group and the Anhui merchant group in the Ming and Qing eras and analyses how culture and belief affect the mode of a governance structure. The author put this governance structure in an incentive framework designed by Holmstrom and Weiss (1985), who proposed that if a governance structure is effective, its internal incentive instruments will be consistent and complementary to the governance structure. Based on this argument, Zhou (2008) argued that, although the piaohao's incentive structure was effective at first, they eventually declined because they failed to adjust their structures to suit the changed environment.

²³ Lou (2007, p.57.) compared the Shanxi piaohao incentive mechanism with that of the mediaeval Italian family business firms and discovered that, unlike the Shanxi piaohao expertise shareholders, who did not have to pay the losses of the piaohao but only enjoyed the dividends, the agents in Italian firms had dividend payments but had to bear the loss if firms were in deficit.

2012, Wang, 2007) still believed that the piaohao's decline was related to the collapse of the Qing court.

Even Li (2005) and Liu (2007), which estimated the share of government remittances in the piaohao's total business, obtain different results.²⁴ My thesis conjectures that the reason for this inconsistent estimation seems to have been the differences between the balance sheets examined by these two scholars and between the periods they worked on. Li (2005) used only four balance sheets from four different piaohao to generalise the piaohao's business structures in 1823-61, 1862-93, and 1894-1911, while the periods worked on by Liu (2002) were the 1850s, 1870s and 1900s. Lack of access to data also caused other deficiencies in exploring determinants for the piaohao's decline beyond the fluctuations of government business.²⁵

When examining the governance structure, Yang (2002), Liu (2005), and Zhou (2008) pointed out that the piaohao's institutional arrangements that endangered their survival by failing to adapt to a changing environment. However, due to the limited scope of their research, these scholars do not provide further explanations to show why the piaohao did not modify their governance structure to suit the changing environment.

After identifying these gaps in the research, this dissertation examines the piaohao's governance structure and business strategies in the following ways. First, to examine the piaohao's governance structure my thesis places the piaohao's historical narrative

²⁴ Li (2005) estimated 10% of the piaohao's business was from the government, while this share, for Liu (2007), is 2%.

²⁵ Jang (2006) and Song (2006) debated whether a currency reform in 1907 deprived the piaohao from making huge profits in handling inter-city silver tael exchanges and led to their fall. However, these authors overlook a key element, namely, how heavily did the income from silver tael exchange impact the piaohao's performance. Moreover, Faure (2005) argued that, since the piaohao made no provision for bad debts in their methods of bookkeeping, which is a mechanism to keep track of capital, it hastened their decline when they were confronted with risks. However, when examining their balance sheets, I found that the piaohao had an item on 'bad loan amortization [piepizhang 撇疲账]' when tracking capital flow. This finding is contradicted by Faure (2006).

within the analytical framework of the theory of the firm.²⁶ Employing theories of transaction cost and principal/agent, this dissertation proposes that two principal/agent relationships were central to the Shanxi piaohao: the relationship between shareholders and head office managers, and the link between head office managers and distant employees. Since the former relationship has been examined by Morck and Yang (2002), the focus of my dissertation will be the latter.

Moreover, in order to explore why the piaohao's governance structure worked well in disciplining distant employees at first but became dysfunctional when they faced the risk of elimination, this dissertation modifies Greif's efficiency wages model (Greif, 2006).²⁷ It finds that when the piaohao had business in prospect and the employees had no other work opportunities, a collective mechanism is self-enforcing. However, when the employees perceived the decline of the piaohao and were able to work in other financial institutions, the collective mechanism became ineffective.

Unlike previous accounts which refer to few data to generalise arguments, this dissertation puts the piaohao's business strategy in a longitudinal context with a wealth of micro-economic data. Focusing on the RSC piaohao, for the first time, not only do I spot dynamic changes in the piaohao's client and draft types, but also identify what factors determined their remittance fees over time. Again, for the first time, by estimating all the Shanxi piaohao's annual government business, my thesis shows that the government business volume never exceeded 10% of the piaohao's total business, and the income from this business occupied only about 2% of the piaohao's total income. Therefore, one needs to reconsider whether the piaohao's decline should be attributed to its relationship with the Qing government.

²⁶ The method of incorporating theory as a tool with which to analyse a historical narrative is described by Bates (1998) as Analytical Narrative.

²⁷ Greif (2006, p.37, pp.88-9.) placed the motivation to follow rules at the centre of the analysis and studied the Maghribi merchants who operated a collective punishment mechanism. From his efficient wage model, Greif (2006 p.37, pp.88-9.) has found that the wage paid by a Maghribi merchant for an honest agent was lower than what he paid to an employee who cheated. Therefore, a collective mechanism was self-enforcing.

Chapter 1. An overview of the Shanxi piaohao

This chapter provides an overview of the Shanxi piaohao with the aim of setting the scene for the remaining chapters. It shows how the Shanxi piaohao emerged and developed as a consequence of reactive sequences path dependency. Moreover, as an introductory chapter, this chapter also examines ways that these piaohao enforced drafts, the currencies they traded in and their bookkeeping methods. These analyses attempt to provide some background information on the way in which the Shanxi piaohao originated and established their business.

1.1 Historical pattern: Reactive sequence path dependence

The province of Shanxi is located in the North China region. The name Shanxi [山西] literally means “Mountain west”, which refers to the province’s location west of the Taihang Mountains [太行山]. Shanxi borders Hebei province to the east, Henan province to the south, Shaanxi province to the West and Mongolia to the north.

Figure 1-1: Location of the Shanxi province



Sources: Chinese GIS in 1820s

Shanxi is made up of a plateau bounded partly by mountain ranges. As a province located in central China, Shanxi has abundant iron and coal, and is famous for handicrafts and silk production. However, 80% of the land in Shanxi consists of arid mountains and hills which were then unsuitable for farming, and in consequence the Shanxi people tended to leave their home towns and travel far afield undertaking commercial business.

For centuries Shanxi served as the centre of trade, with the term Shanxi merchant [Jinshang 晋商] once synonymous with wealth. Shanxi merchants constituted a historical phenomenon that lasted for centuries, from the Han dynasty (206-220 BC) to the Qing Dynasty (1644-1912 AD). The earliest business of the Shanxi merchants was to sell salt from a saline lake in the province (Zhang, 2001 p.20.). During the Spring and Autumn periods [chunqiu 春秋时期] (771-476 BC), salt probably provided the Shanxi people with reliable income by attracting trade. Given the closeness of the border with Mongolia, during the Han dynasty (206 BC – 220 AD), Shanxi locals traded with Mongols across the Great Wall for commodities of all kinds. The exploration of the Silk Road in this era further linked the Shanxi merchants with Westerners. They left home carrying silk, tea and porcelain to exchange for Indian spices, ivories and precious stones, and the Roman Empire's gold, silver, fine glassware and jewels. After importing these exotic goods, the Shanxi merchants would resell them in their retail stores (Zhang, 1989 pp.20-6.).

During the Ming Dynasty (1368-1644 AD), the Shanxi merchants, benefiting from the Kaizhong Law [kaizhongfa 开中法], got a monopoly of the government's salt production and sale.²⁸ As a product of highly inelastic demand, salt gave the Shanxi

²⁸ “During the Ming period (1368-1644), persistent incursions by Mongols, Turks and other northern barbarians caused the Ming to man its northernmost borders with about 800,000 troops. To provide military supplies, the Qing court privatized salt production and granted salt quota certificates to the merchants who transported the troop supplies to the northernmost areas. These certificates conferred the right to buy salt from the state salt works and sell it. Taking advantage of their geographical position, the Shanxi merchants dominated this business and accumulated substantial wealth”, in 晋商兴衰史: 称雄商界 500 年 (*The rise and decline of Shanxi merchants: Dominated the business world for 500 years*, Zhengming Zhang, ((山西古籍出版社 (Guji press)), 2001, p.82.

merchants substantial profits. The Shanxi people had a culture of saving rather than spending fortunes; after several generations' trade and commerce, therefore, they had accumulated substantial wealth.

By the Qing dynasty (1644-1912 AD), the Shanxi merchants had established their retail shop networks all over China; their trade included cottons, silks, tea, leather, pigments, coal, iron products, wood, tobacco, etc. Moreover, they operated most of the pawnshops and credit-debt bureaux in northern China (Huang, 2002b p.28.).

For a long time, these Shanxi merchants used armed escorts for transporting sums of silver to settle their balances. However, from the 1800s, with more and more frequent social riots, traditional methods of shipping silver became increasingly dangerous. In this situation, a chain of dyeing shops, the Xi Yu Cheng [西裕成, XYZ, hereafter] began to accept requests from their acquaintances to remit silver to their branch locations.²⁹

In order to remit silver, the acquaintances needed to submit silver to a XYZ branch, so that the branch would issue a draft and inform the branch in receipt of it to pay in silver as soon as they saw the draft. At first, the XYZ only did this as a favour, but the convenience and safety of the procedure attracted a growing number of people to ask for the same. It was at this stage that the XYZ began to charge a fee (Huang, 2002 p.11.).

In the 1820s, the XYZ was inherited by an ambitious young entrepreneur, Li Daquan, who appointed Lei Lvtao, the manager of the XYZ in Hankou as the head office manager. Like Li Daquan, Lei Lvtao was innovative and believed that a remittance business would be much more profitable to run than a firm of dyers. Inspired by this idea, Lei bravely suggested that Li should convert the XYZ to a remittance firm. In

²⁹ "XYZ was established around 1775 by a Li Wenbin in Pingyao. By the 1820s, the firm had branches in Baoding, Tianjin and Hankou, Tongzhou, etc. From several public construction donation epitaphs in Beijing and Pingyao, the XYZ can be traced as the largest donor. This indicates the strong capital power of the firm. For example, in the 'Epitaph for the City Gate Tower Rebuilding Donation List, 1813', the XYZ was already on the donation list and made the largest donation, Tls. 24," in Huang, *A history of the Shanxi piaohao*, pp.46-51.

response, Lei invested Tls. 300 thousand to establish the Ri Sheng Chang piaohao [RSC, hereafter] in 1823 (Deng, 1997, p.58.). The RSC set up its headquarters in Pingyao Town with twelve branches spread nationwide.

The unique service provided by the RSC won them quick success. At almost the same time, a nationwide postal service developed by the Ningbo merchants facilitated the RSC's remittance business.³⁰ While the RSC enjoyed a great triumph, its vice-head manager Mao Hongsui left the firm due to conflict with Lei Lvtai, his superior. As a consequence, Mao was hired by Hou, a silk merchant and transformed his chain of silk shop into four Shanxi piaohao: Wei Sheng Chang, Xin Tai Hou, Wei Feng Hou, and Wei Tai Hou around 1826.³¹ From then on, the Shanxi piaohao spread in great numbers.

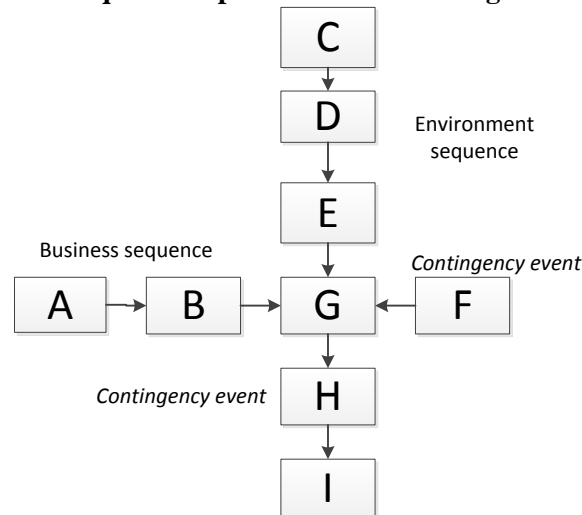
From the above historical narratives, it can be seen that the emergence of the Shanxi piaohao followed the pattern of reactive sequence path dependence.³²

³⁰ "China's postal system was established around 1800. Before Civil Postal Bureaux [minxinju 民信局] were established, mainly by Zhejiang merchants, there was no civil postal service in China and commoners could rely only on acquaintances to bring letters. So the Shanxi piaohao's emergence was inseparable from a new postal system", in Huang, *A history of the Shanxi Piaohao*, p.40.

³¹ Later, in 1864, he invested in another Shanxi piaohao, Tian Cheng Heng. Together with the previous four, these piaohao were known as the Wei Piaohao Group [Weizi wulianhao 蔚字五联号].

³² According to Mahoney (2000), path dependence can be classified into self-reinforcing sequences and reactive sequences. Reactive sequences are chains of temporally ordered and causally connected events. In a reactive sequence, each event in the sequence is both a reaction to antecedent events and a cause of subsequent events.

Figure 1-2: Reactive sequence explanation of the emergence of the Shanxi piaohao



Note:

A. Trade and retail business

B. Credit and debt business

C. Trade volume increased

D. Silver shipping increased

E. Silver being looted or robbed

F. A postal system set up

G. First Shanxi piaohao was set up

H. The conflict between the RSC head and vice head manager.

I. More Shanxi piaohao set up

As Figure 1-2 suggests, the origins of the Shanxi piaohao can be broken down into three main sequences: a business sequence, an environment sequence, and an economic sequence. A business sequence is triggered by certain features unique to the Shanxi piaohao. Shanxi merchants built up their long distance trade and retail business [A]. To solve the financing problems in the trade, the Shanxi merchants established financial institutions such as pawnshops and credit-debt bureaux [B] to provide credit. Undertaking trade business enabled them to develop business rules and customs for long distance trading and operating pawnshops also provided the piaohao with ample experience of operating financial institutions. All these are essential for the piaohao business.

In terms of the environmental sequence of changes, the boom in China's trade volume [C] increased the frequency of silver shipping [D]. A growing number of famine refugees and rioters [E] endangered conventional forms of silver shipping. At this time, a contingency event, China's postal system, was set up [F]. Pegged to this event, this first Shanxi piaohao RSC was established [G]. Although the RSC intended to monopolise the remittance business by protecting its business secrets, another contingent event, the conflict between the RSC head and vice head managers [H] resulted in the departure of the latter from the RSC and the establishment of four more Shanxi piaohao. This set off the boom of the Shanxi piaohao [I].

The intersection of the two sequences (i.e. B and E) is necessary for the emergence of the piaohao. However, without the contingency event F, it is possible that the first Shanxi piaohao might not have been set up. Another contingency event, H, further led to more Shanxi piaohao being established.

As a group, these Shanxi piaohao enjoyed rapid development between 1820 and 1850 by transferring domestic mercantile funds (Huang 2002a, pp.742-751). However, with the spread of the Taiping Rebellion (1852-64), they experienced their first business retreat from southern China.³³ Although the piaohao suffered in this uprising, it also provided another business opportunity for them. As the rebellious troops cut off the official silver shipment routes from south to north, the Qing authorities in 1862 began to allow the piaohao to remit governmental funds on a large scale. Although government remittances faced several bans from the central government, the piaohao managed to continue remitting government funds until the Great Qing Bank was established in 1907.³⁴ Moreover, as the Taiping Rebellion was suppressed, and the number of treaty ports grew, the Shanxi piaohao obtained a relatively peaceful business environment for further development between the 1870s and the 1890s.

³³ The Taiping Rebellion (1850-64) was an anti-Qing rebellion in southern China. During more or less the same period, the Nian Rebellion (1851-68) in central China broke out; it was later joined by the Taiping armies.

³⁴ The government business will be studied in Chapter 5.

At the turn of the century, the Shanxi piaohao encountered another business withdrawal due to the Boxer Rebellion (1900/1)³⁵ and the ensuing eight-county relief expedition.³⁶ However, since this turmoil was limited mainly to Beijing and Tianjin, and many piaohao had already shut down their branches before the war started, they were able to recover as soon as it ended. The peaceful situation lasted for another ten years until the 1911 Revolution broke out. Unlike the previous uprisings, the 1911 Revolution occurred overnight and overthrew the Qing court. Moreover, it cast China into endless civil wars and social chaos before the Nationalist government was established in 1927. It was in these circumstances that the Shanxi piaohao dissolved one after another, and finally disappeared from history in the 1930s.

Here it is worth mentioning that, following in the footsteps of the Shanxi piaohao, merchants in southern China also started a remittance business in the 1860s, known as the Southern piaohao [nanbang piaohao 南帮票号], but most of them were short lived.³⁷ As well as their over issuing drafts and mismanagement, another reason for the southern piaohao's decline may have been the Shanxi piaohao's advantages as first mover to the market. Moreover, unlike the Shanxi piaohao which assisted each other with intra-piaohao business, those Southern piaohao were run more independently.

Table 1-1 shows a list of all the Shanxi piaohao who operated from first to last. Their headquarters divided the Shanxi piaohao into three factions: Pingyao, Qixian and

³⁵ The Boxer Rebellion (1900/1) was an anti-imperialist uprising which took place in Shandong and Zhili provinces.

³⁶ In response to the Boxer Rebellion which was at first supported by the Qing, an international coalition set up by Japan, Russia, the British Empire, France, the United States, Germany, Italy and Austria-Hungary declared war on the Qing court and occupied Beijing and Tianjin in 1900. The war ceased with the signing of Treaty of 1901.

³⁷ "The Piaohao managed by southern merchants were collectively known as the Southern piaohao [nanbang piaohao 南帮票号]. The Southern piaohao on a scale comparable to the Shanxi piaohao were: Fu Kang [阜康] (1865-84), Yuan Feng Run [源丰润] (1889-1910), and Tian Shun Xiang [天顺祥] (1875-1911)", in *山西票号史料* (*Archival Materials of the Shanxi piaohao*), Jianhui Huang, 山西经济出版社 (Shanxi Economic Press), p. 66.

Taigu.³⁸ The Pingyao faction was the largest of the three and the Taigu faction was the most profitable (Huang, 2002a, p.22.).

Table 1-1: A list of all the Shanxi piaohao

No.	Existing Period	Name	Headquarters	Paid-up capital (Tls.)	Number of shareholders
1	1823-1914	Ri Sheng Chang	Pingyao	360,000	1
2	1826-1921	Wei Tai Hou	Pingyao	240,000	1
3	1826-1922	Wei Feng Hou	Pingyao	100,000	1
4	1826-1921	Wei Sheng Chang	Pingyao	120,000	2
5	1826-1921	Xin Tai Hou	Pingyao	160,000	2
6	1830s-1914	Zhi Cheng Xin	Taigu	34,000	2
7	1850-1914	Hui Tong Yuan	Taigu	81,000	3
8	1850-1903	Xie He Xin	Pingyao	100,000	1
9	1856-1913	Xie Tong Qing	Pingyao	360,000	2
10	1859-1889	Yuan Feng Jiu	Qixian	100,000	1
11	1860-1913	Xie Cheng Qian	Taigu	60,000	7
12	1860-1918	Bai Chuan Tong	Pingyao	160,000	3
13	1860-1907	Qian Ji Sheng	Pingyao	100,000	3
14	1861-1912	Da De Yu	Taigu	200,000	3
15	1861-1920	Xu Cheng De	Taigu	150,000	2
16	1864-1920	Wei Chang Hou	Pingyao	150,000	2
17	1864-1921	Tian Cheng Heng	Pingyao	100,000	2
18	1860s-1910s	San Jin Yuan	Qixian	200,000	1
19	1860s-1916	Cun Yi Gong	Qixian	160,000	3
20	1860s-1885	Jv Xing Long	Qixian	100,000	2
21	1860s-1893	Qian Sheng Heng	Pingyao	100,000	1
22	1860s-1911	Qi De Chang	Pingyao	N/A	1
23	1880-1884	Hui Yuan Yong	Pingyao	60,000	1
24	1882-1917	Jin Sheng Run	Taigu	32,000	1
25	1883-1911	Heng Long Guang	Taigu	150,000	2
26	1884-1888	Da De Yuan	Qixian	100,000	1
27	1885-1914	Zhong Xing He	Qixian	60,000	2
28	1884-1940s	Da De Tong	Qixian	100,000	5
29	1880s-1932	Da De Heng	Qixian	60,000	1
30	1892-1900	Yong Tai Qing	Taigu	60,000	2
31	1893-1921	Shi Yi Xin	Taigu	200,000	1
32	1906-1921	Bao Feng Long ^a	Pingyao	260,000	3

Sources: Based on Huang (2002a, pp.1278-80)

^a Unlike the other Shanxi piaohao which were solely invested in by Shanxi merchants, one of the three shareholders in the Bao Feng Long piaohao was Zhao Erxun [赵尔巽], who had

³⁸ “Pingyao, Qixian and Taigu are three towns of city level in Shanxi province. As Shanxi province’s three trading centres, these towns gathered most of the richest merchants in Shanxi”, Huang, *A history of the Shanxi Piaohao*, p.109.

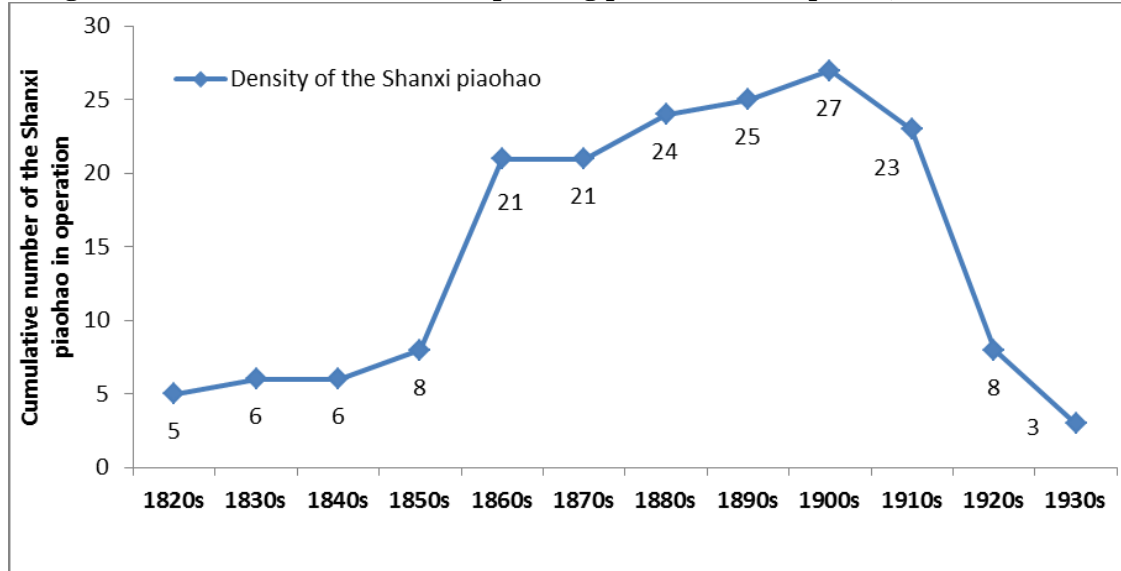
been Shanxi's Provincial Governor (1902/3) and was promoted to Sichuan Viceroy in 1906 (Huang, 2002a p.577.).

As Table 1-1 illustrates a piaohao normally had no more than three shareholders with unlimited liabilities. Unlike other traditional Chinese financial institutions which had family members to run the day to day business, the Shanxi piaohao hired experienced non-family members to take charge of daily operations.³⁹ Normally it was only after three to four years, which the piaohao called the 'Grand Fiscal Cycle [dazhangqi 大帐期]', that shareholders would decide which head managers should be retained, according to their past performance.

Based on Table 1-1, Figure 1-3 plots the cumulative number of operating piaohao in each period. It can be found that this number increased steadily from five in the 1820s to eight in the 1850s. Over the 1860s, this number grew by 2.5 times and it reached a peak of 27 in the 1900s. Within a decade of the 1910s, the number of operated piaohao plummeted from 23 to 8, and by the 1930s, no more than three were left.

³⁹ “The tradition of employing non-family may date back to the Ming Dynasty (1368-1644); they named this institutional arrangement ‘cooperation between shareholders and employees [donghuo hezuo zhi 东伙合作制]’”, in Huang, *Archival Materials of the Shanxi piaohao*, p. 563.

Figure 1-3: Cumulative number of operating piaohao in each period, 1820s to 1930s



Sources: Ibid.

1.2 Draft enforcement

In an environment which had few commercial laws to regulate and protect the interest of financial institutions, the piaohao designed a number of regulations to ensure the credibility and enforcement of their drafts. A typical draft enforcement procedure was for client X to submit silver to a piaohao branch A; then A would issue a draft to X who would then send the draft to another client, Y, to cash it in another branch, B.⁴⁰ This draft is a uniform invoice in triplicate: the counterfoil [piaogen 票根] was kept in the branch that issued the draft, the payment order [songpiao 送票] was given to the client who would cash the draft, and a receipt was given to the client who sent the draft. Here it should be noted that, unlike bills of exchange, the Shanxi piaohao's drafts could not be endorsed. Instead they circulated only between buyers and sellers.

⁴⁰ From the RSC business letters (Huang, 2002a pp.833-1100.), I have found in a few cases that the RSC helped other Shanxi piaohao to cash their drafts.

Figure 1-4: A triplicate uniform invoice of the Da De Heng piaohao



Source: Huang (2002a p.685).

To prevent counterfeit drafts, the piaohao merchants used a special type of paper and printed delicate watermarks on their drafts. In addition, they created a method named ‘secret signals [miya 密押]’. Initialed by the RSC head manager, Lei Lvtao, the RSC chose China’s nine provinces yan [兗], qing [青], xu [徐], yan [扬], jing[荆], yu [豫], liang[梁], and yong [雍] to indicate the numbers one to nine; they used a twelve word line from a ballad such as ‘Be cautious of counterfeit drafts [谨防假票冒取], and do not forget to check stamps [勿忘细视书章]’ to signify the twelve months. To represent days, a poem thirty words long was applied (Deng, 1997 p.63). Learning from the RSC, other Shanxi piaohao also adopted the secret signal method, using different poems and ballads.⁴¹

These secret signals were usually written in the back of a draft corresponding to the information written on the front. Therefore, when a branch staff member received a

⁴¹ From the archival book (Huang, 2002a p.681), I have found that the DDH piaohao used a five-character poem to indicate numbers one to ten, while the WTH piaohao used an antithetical couplet to refer to these numbers.

draft from another branch, he could check whether the information on the front and the words on the back were consistent. These passwords had to be recited by the staff and were changed periodically (Deng, 1997 p.63). Moreover, to prevent other people from faking drafts, the piaohao also insisted that each branch should only have one staff member to write the drafts and thus make sure that staff in other branches could recognize his handwriting (Wei, 1944 pp.108-9.).

When a draft was lost, a client had to report to his local magistrate, and then the local magistrate would authorize a member of the local piaohao guild to check with the relevant piaohao. After receiving confirmation by letter [存照] for retention from the local court, the piaohao and the client would collectively announce in a public newspaper that this draft was no longer valid.⁴²

There were two ways to cash drafts: one was called ‘on-demand payment [见票立付]’, which means that the piaohao had to pay upon sight of the draft; the other was ‘long-term payment’, which means the piaohao could postpone a remittance to a promised day (Wei, 1944 pp.108-9.). For some clients, the piaohao also provided remittances in advance. Customers could ask the piaohao to remit a certain amount of money by borrowing from the piaohao, and would repay it on a promised day (Chen, 1937 p.144.).

To reduce the cost of shipping silver,⁴³ the Shanxi piaohao created a unique type of draft, the ‘inverse draft [nihui 逆汇]’ (Huang, 2002a p.677.). An ‘original draft [shunhui 顺汇]’ is set up for a client who gives silver to branch A and can cash it in branch B, while an ‘inverse draft’ is set up for a client who gives silver to branch B and can receive it in branch A.

These two types of draft appealed equally to clients. However, the inverse drafts largely improved the piaohao’s capacity to mobilize silver without shipping it. From

⁴²商部奏折附片 [Memorandum of the Board of Revenue], 财政金融类 [Finance and Monetary], 1908, in Huang, *Archival materials of the Shanxi piaohao*, p.686.

⁴³ “Shipping silver in an armed convoy would cost 2 to 3 per cent of its value”, in *Tradition and Transformation*, John K. Fairbank, Edwin O. Reischauer, and Albert M. Craig, (Boston: Houghton Mifflin Company, 1989), p.333.

their business letters, I have observed that when one branch, A, was short of silver, its manager would request other branches to send more inverse remittance drafts to him.⁴⁴ As with their development, the Shanxi piaohao also incorporated deposit and loan business with their inverse and loan drafts. Based on business letters of the WTH and RSC piaohao, Table 1-2 summarizes all the types of draft in the Shanxi piaohao.

Table 1-2: Types of draft in the Shanxi piaohao

Type	Operation
Direct original draft	A client who gives silver to branch A and can cash it in branch B
Direct loan draft	A client who borrows from branch A for remittance to branch B will pay it back to A
Inverse original draft	A client who gives silver to branch B and can cash it in branch A
Inverse loan draft	A client who borrows from branch A for remittance to branch B which is paid back to branch B

Sources: Compiled based on WTH and RSC business letters (Huang, 2002a, pp.833-1214.)

The table shows Shanxi piaohao had *direct original*, *direct loan*, *inverse original drafts*, and *inverse loan* four types of drafts. A ‘direct original draft’ refers to a client who gives silver to branch A and may receive it in branch B; a ‘direct loan draft’ refers to a client who borrows from branch A for remittance to branch B and will pay it back to branch A in the future; an ‘inverse original draft’ refers to a client who gives silver to branch B and may receive it in branch A; an ‘inverse loan draft’ refers to a client who borrows from branch A for remittance to branch B and pays it back to branch B in the future. By designing different types of draft, the piaohao not only provided their clients with more choices for their services, but also lowered their transaction costs through the market.

1.3 Ways of sending drafts

Besides designing four types of draft, the Shanxi piaohao also gave clients three optional ways to send their drafts: by paper draft [piaohui 票汇], letter draft [xinhui 信汇], or telegram draft [dianhui 电汇]. A paper draft, the most commonly used form,

⁴⁴ This observation is made on the basis of analysing 824 RSC piaohao drafts and 126 Wei Tai Hou piaohao drafts (Huang, 2002a pp. 833-1214.).

refers to a client X who submits silver to branch A, and sends the draft to a client Y who can go to branch B to cash the draft. A letter draft means that client X submits silver to a branch A. This branch would then write a letter to branch B, stating that a client Y would cash the draft with a letter. At the same time, client X also writes a letter to inform client Y that he should carry the letter with him to cash the draft. Having received the letter, Y would bring it to branch B to cash the silver. The piaohao did not issue a draft but a letter in this process. Letter drafts were only permitted to major clients of long standing (Huang, 2002a p.690).

With the spread of telegraph in the 1880, the piaohao began to use telegram drafts in addition. With these, after a client X submitted silver to branch A, the branch would send a telegram to branch B to cash the draft when it saw the telegram. Compared with the paper and letter drafts, telegram drafts shortened clients' waiting time but in doing so reduced the length of time between a piaohao's receiving and paying out silver. As the branch manager of the WTH piaohao in Beijing stated in a business letter: "Although we helped our clients to get out of their emergencies, the profits we made from this business are small. Using the telegraph not only reduced the length of time for us to mobilize the silver, it also makes it easy to counterfeit drafts. Therefore, apart from exceptional cases, we should in future avoid using the telegraph to send drafts (Huang, 2002a, p.678.)".⁴⁵ In addition to the WTH, of 3,642 transactions of the RSC piaohao, I have found only 28 drafts that were sent by telegram.

1.4 Traded currencies

The monetary system in Qing China may have been the most complicated one in the world at the time (Cheng, 2003 p.95.). There was a bimetallic currency system with numerous silver taels, copper coins, and paper notes as the medium of exchange. Copper coins are measured in counting units with 'wen' as the base unit while silver taels are measured in weighed units with 'tael' as the base unit. Both of these

⁴⁵ In the Qing dynasty, the cost of sending a letter varied from 24 *wen* to 100 *wen*, and it could be delivered within 8 to 15 days. The cost of sending a telegram varied from Tls.1 to Tls. 5 (Tls. 1 \approx 1,000 *wen*), and it can be received instantly.

mediums of exchange had plenty of local variations in purity and weight.⁴⁶ Silver taels were normally used in large business transactions such as trade and taxation, and copper coins were used as the means of exchange in small matters (Peng, 2007). Since most of the transactions in the Shanxi piaohao were paid in silver, this dissertation introduces below the types of silver that the piaohao dealt in.

Because the Qing authority did not have a systematic silver mint bureau, different places had their own silver taels which differed in purity, shape and weight (Ma, 2011 p.4.). In general, four types of silver were in circulation: 'baoyin [宝银]' which was made in the shape of an ingot, with each 'baoyin' roughly equalling Tls. 50; 'Xiaoyuanbao [小元宝]' which was smaller than the 'baoyin' and equalled Tls. 10; 'xiaoguo [小鐶]' which was cast in the shape of a bun and equalled Tls. 1-2, and 'silver shard [suiyin 碎银]' which was less than Tls. 1 (Peng, 2007 p.537.).

As a payment medium, silver is measured in weight. However, China's sets of weights were not standardised in the Qing era, and weights in different places were different. Even in a single city, a number of weights would be used. Of the various weights, four were widely accepted: Kuping [库平], guanping [关平], guangping [广平] and caoping [漕平]. The silver taels measured by these four weights were also the most commonly circulated.⁴⁷ Each piaohao had a set of weights named 'benping' [本平].⁴⁸ When clients carried their silver to a piaohao, based on the 'benping', the piaohao would check whether the clients' silver weighed more or less than the 'benping'. If it weighed less, the piaohao would deduct the difference when the silver was submitted, while if it weighed more, the piaohao would make up the rest. This weight difference was reflected as the 'silver weight disparity income' and 'silver weight disparity expense' in the piaohao's balance sheets.

⁴⁶ "Turning to copper coinage, one copper coin was called 1 wen, 1000 wen equalled 1 diao, and the diao was the largest unit of account for copper. As regards silver taels, Tls. 1 equalled 10 qian, 1 qian equalled 10 fen, and 1 fen equalled 10 li. Therefore, Tls. 1 equalled 1,000-2,000 wen coins", in *Chinese Money and Monetary System*, Debin Ma, p.8.

⁴⁷ In public taxation, 'kuping silver' was used, while in the Maritime Customs employed 'guanping silver', *ibid*.

⁴⁸ The weight of each silver ingot and what types of weighing it could be used for were carved on its surface, *ibid*.

From a report of the ‘Central Bank Monthly Review [zhongyangyinhang yuebao 中央银行月报]’ (Huang, 2002a p.697.), I have found that there were about five to six types of weight in each city, with about one hundred types of weight in use at the same time. In order to remember the difference between the ‘benping’ and other types of weight, the piaohao created pithy mnemonics for their staff. For example, in the Da De Heng [DDH hereafter] piaohao, the formula between benping and qigongping [祁公平] is: ‘62, 124, 186, 248, 310, 272, 434, 496 and 558 (Huang, 2002a p.699.).’ This means that Tls. 100 qigongping silver is Tls. 0.62 smaller than the DDH benping silver, Tls. 200 qigongping is Tls. 1.24 smaller than the DDH benping ...and Tls. 900 qigongping is Tls. 5.58 smaller than the DDH benping.

Table 1-3 shows the descriptive results of the weight difference between the DDH ‘benping’ and other types of weight. It shows there were 96 different types of weight for the DDH to deal with. A mean of -1.31 indicates that if a client remitted Tls. 100 of silver in DDH, he normally received Tls. 98.69 in another city.

Table 1-3: Descriptive results of the weight difference between DDH benping and DDH benping (per Tls. 100)

Variable	Observations	Mean	Std. Dev.	Min	Max
Disparity with Benping	96	-1.31	1.71	-5.4	2.1

Source: 中央银行月报 Central Bank Monthly Review, volume 6, No. 12 (Huang, 2002a pp.699-701.).

Here it may be worth pointing out that, although each piaohao had its own weights, differences between each one’s were very small. Table 1-4 illustrates the descriptive results of another Shanxi piaohao, Da De Tong (DDT, hereafter), on its ‘benping’ and the differences with other types of weight, which show that only Tls. 0.17 difference can be found in Tls. 100, and such a small difference was probably a matter of indifference to clients (Huang, 2002a p.712).

Table 1-4: Descriptive results of the difference between DDT benping and other types of weight (per Tls. 100)

Variable	Observations	Mean	Std. Dev.	Min	Max
Disparity with Benping	32	-1.48	1.89	-5.31	1.66

Sources: Ibid.

Like the weight, the purity of the silver in different places also varied. For the convenience of accounting, the Qing authority set an imaginary silver tael, the wenyin, which stood for a silver coin of 100% purity. However, in practice no wenyin existed; other types of silver represented wenyin for accounting purposes (Ma, 2011 p.8.).

In contrast to ‘wenyin’, ‘baoyin’ was the name of the actual silver pieces in circulation. These baoyin had different names according to their place of origin and purity. For example, Tianjin circulated baibaoyin while Suzhou used subaoyin for transactions (Huang, 2002a p.695.). Table 1-5 gives the descriptive results of the silver with different levels of purity that the DDH piaohao dealt in. These reveal that 27 different levels of purity could be found in its currency. A mean of 98.3 % indicates that this coinage on average contained 98.3% pure silver. In a market with thousands of different types of silver in circulation, this high purity to some degree ensured the piaohao’s reputation.

Table 1-5: Descriptive results of silver types

Variable	Obs	Mean	Std. Dev.	Min	Max
Purity	27	98.3%	0.03	85.6%	100%

Sources: Ibid.

1.5 Account books and book-keeping methods

To record business, the piaohao had three types of accounts: running accounts [liushuizhang 流水帐], itemized accounts [xiliuzhang 细流帐] and the general ledger [zongqingzhang 总清帐]. A running account is a basic account; it documented every transaction as it occurred. Since the handwriting in the running accounts was imperfect and hasty, at the end of every month, each branch would transcribe all the

transactions from the running accounts to the itemized accounts to compile a monthly balance sheet [yueqing 月清]. At the end of every year, these branches would prepare the general ledger and submit it to the head office. According to these general ledgers, the head office would compile a general annual balance sheet [zongqing 总清] and distribute dividends (Li, 2012 p.45.).

In recording their transactions, the piaohao used a bookkeeping method called the ‘four pillars [sizhufa 四柱法]’. This method consisted of four parts, namely, revenue [shou 收], submission [jiao 交], assets [cun 存] and liabilities [gai 该].

The ‘revenue’ by definition was all the amounts in silver that the piaohao had received in the past year. It included ‘silver in received drafts [shouhui 收汇]’, ‘income received from interest [dexianliyin 得现利银]’, ‘fees for the remittance service [detiefeiyein 得贴费银]’, and ‘income from the weight and purity of the silver [dexianseyin 得现色银]’, together with all other income. Under the heading of ‘submission’ was all the silver that the piaohao paid out, including the ‘silver in posted drafts [jiaohui 交汇]’, ‘property rents [fangzu 房租]’, ‘board expenses [zashiyin 杂使银]’, ‘amortization of bad loans [pizhang 撇疲帐]’, and so on. ‘Assets’ covers ‘all the loans [waigai 外该]’, the ‘interest receivable on them [yingshouliyin 应收利银]’, and the ‘cash reserve [xiancun 现存]’. ‘Liabilities’ stood for ‘deposits [gaiwai 该外]’ and the ‘interest payable on these [yingfuliyin 应付利银]’ (Li, 2012 pp.44-47.). For a Shanxi piaohao, at the end of every year, the difference between ‘revenues’ and ‘submissions’ had to equal the change in its net assets (i.e. difference between ‘assets’ and ‘liabilities’). Table 1-6 is an example of an annual balance sheet of an RSC piaohao, the Yangzhou branch in 1867, which indicates that in 1867 the ‘revenues’ for this branch totalled Tls. 0.33 million, with a ‘submissions’ of Tls. 0.30 million, ‘assets’ worth Tls. 0.31 million, and ‘liabilities’ standing at zero.

Table 1-6: Annual balance sheet of the RSC Yangzhou branch in 1867 (Tls)

Item	Amount	Total
Opening balance of deposits –liabilities from the previous year	0.00	0.00
Revenues		331,299.17
Drafts received	324,132.50	
Income from remittance service fees	7,083.67	
Income from silver weight and purity disparities	83.00	
Submissions		300,275.31
Submitted drafts	297,744.54	
Property rents	200.00	
Board expenses	1,152.32	
Travel expenses	15.22	
Office expenses	5.86	
Entertainment expenses in government business	42.08	
Escort expenses to Suzhou	56.57	
Expenses in escorting Zhang Xidai's coffin to Qingjiangzhen	12.80	
Renovation cost of the East gate	51.78	
Heating costs	84.30	
Interest paid	909.84	
Assets		31,024.86
Deposit with the head office	31,024.86	
Liabilities	0.00	0.00

Source: RSC 1867 Yangzhou branch annual balance sheet (Advanced Asia Studies Library, University of Tokyo).

Based on Table 1-6, Table 1-7 shows the corresponding profits statement of the Yangzhou branch. It appears that this branch had a total income of Tls. 7,166 with total expenses of Tls. 2,529, which left Tls. 4,636 as profit.

Table 1-7: Profits statement of the RSC Yangzhou branch in 1867 (Tls)

Item	Amount	Total
Income		7,166.67
Income from remittance service fees	7,083.67	
Income from silver weight and purity disparities	83.00	
Expense		2,529.77
Property rents	200.00	
Board expenses	1,152.32	
Travel expenses	15.22	
Office expenses	5.86	
Entertainment expenses in government business	42.08	
Silver escorting expenses to Suzhou	56.57	
Expenses in escorting Zhang Xidai's coffin to Qingjiangzhen	12.80	
Renovation cost of the East gate	51.78	
Heating costs	84.30	
Interest paid	909.84	
Profit	4,636.90	4,636.90

Source: RSC 1867 Yangzhou branch annual balance sheet (Advanced Asia Studies Library, University of Tokyo).

1.6 Concluding remarks

As introductory material, the piaohao's historical pattern, draft enforcement, traded currencies and bookkeeping methods were examined in this chapter. A geographically based merchant group which specialized for centuries in long distance trading, the Shanxi piaohao emerged on a path of reactive sequence path dependency. By incorporating deposit and loan business and designing four types of draft, the piaohao not only enlarged the scope of their business, but also reduced transaction costs. Beset by a chaotic currency system, the Shanxi piaohao coped with remittances and at the same time seized profits by dealing in different types of silver. As it did so, it produced three schemes of accounting and employed a 'four pillar' bookkeeping method which enabled the firm's financial condition to be understood at all times.

Chapter 2. Management mechanism: how did the piaohao discipline their distant employees?

The traditional Chinese legal apparatus had long been an integral part of the bureaucratic administrative system within the hierarchy. Hence, the Qing authority developed little legislation in regulating and protecting firms (Faure, 2006, p.46.). In a situation where no law guaranteed the shareholders' property, an effective governance structure was indispensable for the success of the piaohao.

This chapter examines the piaohao's management structure and is organized as follows. First, it introduces the state of the law in China in the late Qing era and asks why the Shanxi piaohao made an effort to develop comprehensive rules for managing its employees. Section 2.2 examines the piaohao's management structure by analysing the personnel arrangements and the vertical and horizontal management structure; section 2.3 goes on to explore the risks entailed by this structure.

2.1 Absence of commercial and customary law in late Qing China

2.1.1 Expensive court fees and weak enforcement of judicial decisions

People in the Qing dynasty were litigious. A county magistrate who was responsible for 20,000 households might receive more than 20,000 litigation letters each year, about 50 letters per day. For a county magistrate this was a burden. To ease his task, the Qing authority designed complex and expensive court proceedings to discourage people from going to law (Fuma, 1993 p.393.).

For a plaintiff, the first obstacle to formal litigation was the need to write a proper letter of complaint, stating the names of the plaintiff and the defendant and detailing a statement of the case in a reasonable and acceptable way. The case statement must neither exaggerate nor simplify the case. If the complaint letter was rejected by a county magistrate, the case would not be processed. In fact, of the 50 letters received per day, a county magistrate would only deal with two to three and would reject the remainder as incoherent. Therefore, in order to prepare suitable litigation letters, both plaintiffs and defendants spent much money on having them written by famous legal

instructors [songshi 讼师]. This expenditure was necessary, since most judicial decisions were made on the basis of the litigation letters (Fuma, 1993 p.398.).

After writing them, all plaintiffs were required to submit them to the magistrate's court in person. Therefore, if a plaintiff lived in the countryside, he had to travel to the town and remain there, which together cost dozens of taels (Fuma, 1993 p.398.).

Even after the county magistrate had accepted the complaint letter and begun investigating the case, all the related costs, e.g. the cost of sending staff on errands to inform the plaintiff and defendant to attend the hearing, would also be borne by the plaintiff. Moreover, as most of the cases were processed by the county magistrate's personal advisors [muliao 幕僚], both plaintiffs and defendants had to bribe them to learn how their case was progressing, which was also costly (Fuma, 1993 p.398.).

Sometimes, due to the government's weak enforcement, plaintiffs who won their cases still could not solve their problems. By examining a land dispute, Terada (1997 p.233.) found that even after a county magistrate had made a judicial decision that the defendant must compensate the plaintiff, the debt remained unpaid. This was partly due to the defendant's character – he was brutal and insolent – and partly to the lack of power to enforce these decisions on the part of the county magistrate. For Terada (1997), the natural mode of the Chinese judicial system was merely to tinker at the edge.

2.1.2 Grounds of judgement: The Qing Law vs. private contracts and orders [约 yue]

During the Qing era, a lawsuit could be classified either a criminal or a civil case. Felonies normally involved robbery or murder, and were based on the Qing Law [daqinglüli 大清律例]. If the case merited less than a custodial sentence (exclusive), it would be judged by a county magistrate. But if the penalty included imprisonment, this case would be judged first by the county magistrate, and then by a provincial governor [xunfu 巡抚] who would forward it to the Ministry of Justice. After investigation, the Minister's officials would report the case to the emperor, who made the final decision (Shiga, 1998 p.11.). During this process, if any official disagreed with the previous judgement or if the plaintiff or the defendant was dissatisfied with

the judgement, the case would be re-examined until the defendant admitted his guilt (Shiga, 1998 p.12.).

Unlike criminal cases, civil cases concerned questions of marriage, land and property disputes, and were usually adjudicated only by a county magistrate. Moreover, again unlike felonies, which were judged strictly on the basis of the Qing Law, a county magistrate usually sought a middle ground by consulting local rules, social norms and conventions and common sense to solve civil disputes, as long as the Qing Law was not flouted (Shiga, 1998 p.13.). They did so because, first of all, on many civil disputes the Qing Law had no comprehensive or systematic codes (Shiga, 1998 p.13.). Second, county magistrates were trained in the Confucian school which advocates ‘the doctrine of the mean [zhongcai 仲裁]’ and encourages people to use moral consciousness in civil questions, rather than laws. Therefore, when solving civil disputes, county magistrates preferred to act as a parent, taking consideration for of the needs of all parties concerned as well as the local customary rules, and finding a balanced solution for both sides of a dispute (Wang, 1998 p.437.). If either the plaintiff or the defendant was unhappy with the judgement, he could appeal or go to a higher magistrate’s court until both parties were content (Wang, 1998 p.437.).

From the Qing Law, I have found that out of more than 2,000 articles, only 3-4 related to commercial disputes, while the rest concerned marriages, household registration and rites. Of the articles on commercial disputes, one was about setting up a firm and another was about a firm embezzling customers’ assets. Two articles related to the rules for protecting an entity firm. These were:

1. Regulation of servants who steal their master’s property (Article 272.04): a servant who steals his master’s property will be convicted on an indictment of robbery.
2. Regulation of indictments of robbery (Article 266.17-19): a person who robs other people of their assets, depending on circumstances, will receive 80 or 100 strokes with a rod and be imprisoned for three years, or be beaten with a rod and imprisoned for three years and then exiled, or sentenced to death. If

the robber's family knows what he has done and has shielded him, they will all be punished. The robber's property will be sold to pay the victim.

As it can be observed, the main function of the Qing Law was to empower bureaucrats to mete out punishments to the extent of criminal violations and to oversee a process of endless appeals through the hierarchy of a bureaucracy which could be arbitrary and inefficient (Ma, 2006 p.6.). Understandably, to solve their disputes people in the Qing dynasty preferred to employ various private orders and contracts.

As early as the Sui Dynasty (581-618 AD), Chinese officials had withdrawn their power to control social groups, which left blood-based or geographical-based groups with a high degree of autonomy regarding the management of the community's behaviours (Mio, 1992 p.358.). People relied on these spontaneous social groups for public education and financial support and at the same time were required to obey their orders absolutely (Ma, 2006 p.13).

When a private order had to be set up, it was usually initiated by a few persons [shouchang 首唱]; then middlemen would bargain and promote it all around the community. After a series of negotiations and modifications, with more and more people following this order [change 唱和], a new order was established (Terada, 1994 p.179.).

As important as the Qing Law itself, private orders and contracts constituted another aspect of the Chinese legal system (Terada, 1994, p.141.). Although these orders and contacts did not form part of the formal law, they were more generally employed in regulating behaviour within villages, clans, guilds and families. In the case of a lawsuit, they could be invoked as grounds in judging the case (Terada, 1994, p.142., Ma, 2006).

As with other social groups in China, the Shanxi piaohao is a type of geographically based merchant group. In a weak legal environment devoid of laws to protect shareholders' capital, the piaohao merchants formulated a series of rules and

regulations with the aim of solving the commitment relationship in their long distance business.

2.2 Strict control on employees' work and life

All individuals are self-interested. Therefore, they need an effective control system that ties their interest closely to that of the organization. This needs a management system that specifies performance measurement and evaluation system for each subdivision of the firm and each agent (Jensen, 1998). In this section, by examining the piaohao's personnel arrangements and its vertical and horizontal management structure, we see how the Shanxi piaohao management system was designed to lower the risk of employees who cheated and mitigate the commitment problem.

2.2.1 Personnel arrangements: Strict background investigation and promotion process

Shanxi people used to regard working in a piaohao as the only way to become well-off, so entry was fiercely competitive (Li, 1937, cited in Huang 2002a, p.613). Not only did a candidate need to find two guarantors to recommend him but his family background would also be checked to ensure that his family had no record of bad behaviour. As a contemporary scholar recorded:

“Before recruiting a new employee as an apprentice, the head office manager needs two people who would act as referees for him. These two guarantors should be well known and wealthy, they should be guarantors for the employees' life-time, and if any guarantor terminates guarantor status, the employee should find a replacement for him, or else he will lose his job. If any employee causes huge loss to a piaohao through his misbehaviour, his two guarantors are required to repay the loss. The manager also needed to know the careers of the candidate's ancestors for three generations back to reassure himself about their behaviour. Normally within a year of apprenticeship, the piaohao would decide if the apprentice would stay or not. For those disqualified apprentices, the piaohao

would dismiss them as early as possible for them to find other suitable jobs (Jie, 1936, cited in Huang 2002a, pp. 611-614.).⁴⁹

According to its needs, each piaohao would recruit 10-15 apprentices annually, aged between 15 and 17, to be trained for three years (Li, 1937, cited in Huang, 2002a, pp.612-3.). In the first year of their apprenticeship the young men had to clean the floors, fetch water and serve the head office manager all day. At night, they had to practise calligraphy and abacus calculation. During the year, the head office manager could observe whether the apprentices were loyal to him and were smart and diligent. After the first year's assessment, some apprentices would be dismissed; the others went on to the second year.⁵⁰ This was when the apprentices would learn accounting, transcribe business correspondence, and remember the weight and purity disparity between different types of silver. At the same time, they would work as vice street runners [fupaojie 副跑街] to collect marketing information and contact customers. As the third year drew nearer, apprentices would begin to take part in the piaohao's daily operation, for instance, as assistant accountants in clearing accounts or to help as amanuenses [wendu 文牖] in transcribing business letters (Li, 1937, cited in Huang, 2002a, p.591). The head office manager would select the smartest apprentices, teach them ways of doing business and then send them to work in the branch offices (Qiao, 1961, cited in Huang, 2002a, p.612-3.). Here it is worth mentioning that, to avoid favouritism, piaohao managers were forbidden to employ their own relatives, but they could act as guarantors of family members who worked in other piaohao.⁵¹

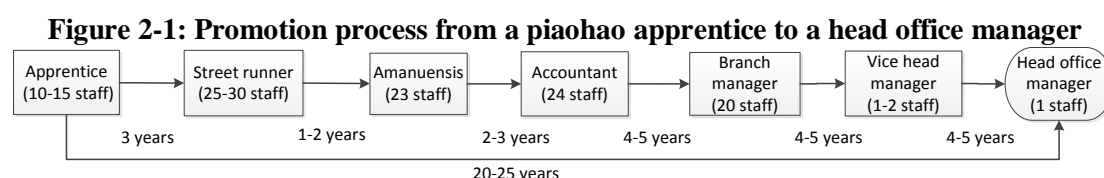
Figure 2-1 depicts the promotion process of the Shanxi piaohao. It shows that, at the end of their three years' training, apprentices would be set to work as street runners whose job was to collect marketing information and deal with clients' queries. Those

⁴⁹ Jie Zunsan [颢尊三] was the former head manager of the DDH piaohao (Huang, 2002a, p.611.).

⁵⁰ From the RSC business correspondence, I found that in 1889 the RSC recruited 13 apprentices, but within the first year two were dismissed (Huang, 2002a, pp.833-1100.).

⁵¹ Again from the RSC piaohao business correspondence, I have found a reference written by the manager Li Wanyuan for his employee Dai Jvshan to work in another piaohao under the supervision of Mr Zhen. At the same time, Mr Zhen's son worked for Mr Li; thus they stood as guarantors for each other's employees (Li, 2012 p. 92.).

with outstanding performance could become amanuenses [wendu 文牖] and be put in charge of writing business correspondence.⁵² After some years' work experience, amanuenses were sometimes promoted to the post of accountant, with a status equal to that of a branch vice-manager. If these accountants were recommended by their branch office managers or were commended by the head office manager, they could be promoted and become managers of branch offices (Li 1937, cited in Huang 2002a, p.612). To give branch managers a broader understanding of the whole operation of the piaohao and prevent corruption, branch managers also rotated to various locations (Jie 1936, cited in Huang 2002a, p.611.).⁵³ It was during this long tenure process that the head office manager would select the most excellent candidates as vice-head office managers, who could eventually become the manager of a head office.



Source: Compiled on the basis of Li (1937, cited in Huang, 2002a, pp.591-2) and Jie (1936, cited in Huang, 2002a, p.591.).

Note: the number of employees in the bracket is for a piaohao with about twenty branches.

The above analyses suggest the Shanxi piaohao put the employee's honesty as the highest prior first in hiring and promoting employees. An investigation on employees' family background endogenously incentivised these employees' forebear to be honest out of a desire to preserve their descendants' future job prospects, and a guarantor system enabled the piaohao to use the employees' family and their guarantors' assets as a mortgage for any cheating behaviour. Besides a strict background investigation, piaohao also normally promoted employees within the firm with long tenure

⁵² As the piaohao relied on business correspondence for most of their communication, their amanuenses had a high position. When an employee became an amanuensis, his status rose (Li, 1937, cited in Huang 2002a, p.591).

⁵³ From the RSC business correspondence, I found they frequently mentioned employees who had been transferred from one branch to another, e.g. RSC 1899 business letters from Guangzhou to Pingyao (Huang, 2002a p.1029.). This can be also evidenced in the business letters of the WFH piaohao.

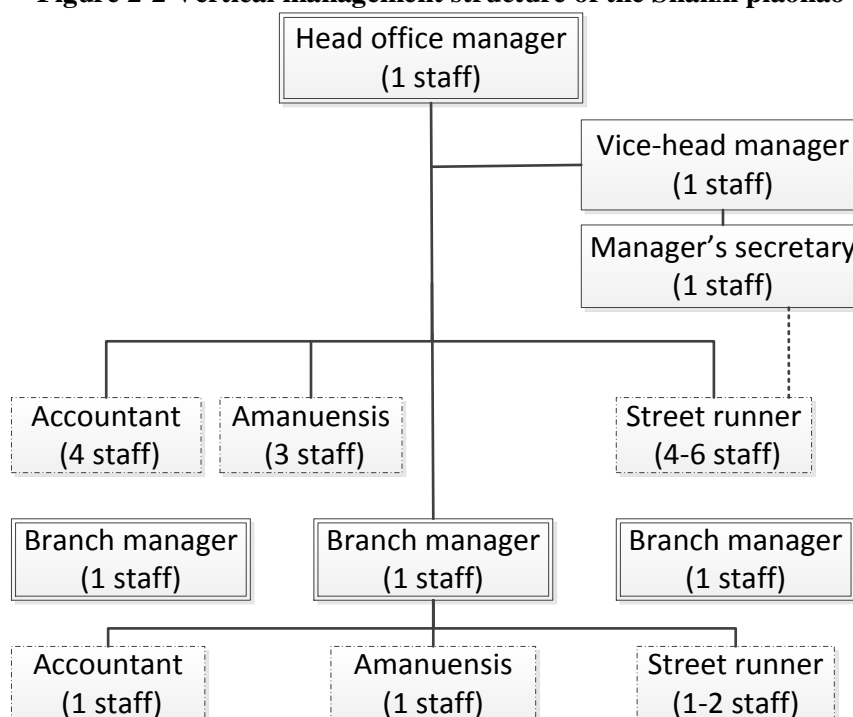
promotion. This process not only gave head office managers enough time to evaluate employees' intelligence and loyalty, but also incentivised employees to be honest and work hard if they wanted promotion. Besides these personnel arrangements, the piaohao also imposed a centralized vertical management structure to control distant employees, a structure which is illustrated in the next section.

2.2.2 Centralized vertical management structure

2.2.2.1 A centralized M-form structure

In the Shanxi piaohao all branches were administered under the supervision of the head office manager [dazhangui 大掌柜], who had the right to take absolute decisions and control operation over the whole piaohao. The head office manager was assisted by the vice-head manager [erzhanggui 二掌柜], who would carry out and supervise his decisions and the manager's secretary [sanzhanggui 三掌柜] who functioned as the support of the vice-head manager. Moreover, the manager's secretary was responsible for the front desk business in the head office (Li, 1937, cited in Huang 2002a, p.612).

Figure 2-2 Vertical management structure of the Shanxi piaohao



Source: Compiled on the basis of Li (1937, cited in Huang, 2002a, pp.591-2.) and Jie (1936, cited in Huang, 2002a, p.591.).

As Figure 2-2 illustrates both the Shanxi piaohao head office and branches were self-contained units and had their own functional departments. Branches were independent of each other and the branch managers had some autonomy to exercise daily operation and decision rights. If we apply the devising of the structure of the firm, the Shanxi piaohao built to a quasi-multidivisional form (M-form).⁵⁴ A typical M-firm is the sub-firm managers are given operational and decision rights by making use of local information, and the central manager is in charge of the overall strategies for the business. But it could be risky when the head manager gave too much power to the branch office and lost his control over the firm. Unlike the typical M-form, the

⁵⁴ “A multi-divisional firm is one where the parent firm owns the sub-firms and each sub-firm operates under the same name as the parent firm and has its functional departments and operates autonomously. The key difference for this dissertation to differentiate a M-form and U-form firm is the former is a parent company owns *smaller companies*, while the latter is under the head firm there were different *function departments* which takes care of strategic and decision making process in *Coordinating Changes in M-form and U-form Organizations*, Yingyi Qian, Gerard Roland and Chenggang Xu, paper for the Nobel Symposium, 1999, p.3.

Shanxi piaohao imposed a highly centralized management structure which gave the head office manager supreme rights over the whole piaohao.

In fact the piaohao head managers separated the right of decision from the right of operation as regards the branch managers. Branch managers had daily operation rights such as monitoring the accounts, accepting deposits, issuing loans and taking remittance business under certain limited amounts. But when the branch managers met large business transactions, they were required to report to the head office manager for permission. Besides this, the branch managers had to send business correspondences every 7-10 days to the head office and other branches to report their business conditions. Based on the information that the branch office sent to the head office, the head office manager made operative decisions and allocated funds according to the operative conditions of each branch.⁵⁵ If any branch managers did not obey the orders of the head office, they would be punished.

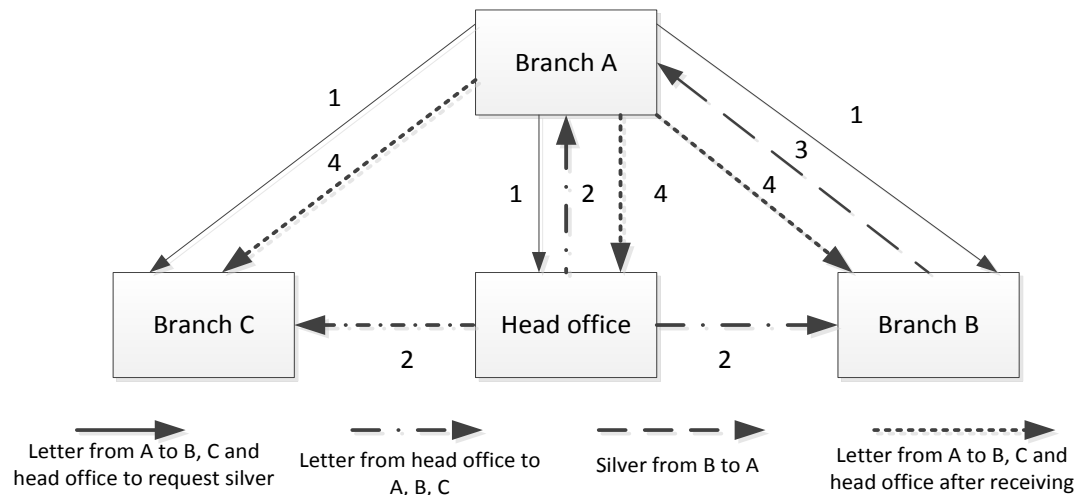
Figure 2-3 shows the information of flow between the head office and branches. If a branch A required large an amount of silver to be shipped from a nearby branch B, it had to ask the head office for permission and let other branches know this request. After acquiring this information, based on the silver reserve in other branches, the head office manager would write to branch B and require its branch manager to send the silver. At the same time he would inform A and C of this decision. After receiving this order, branch B could send the silver to A, and once A received silver it would write another letter to inform head office and other branches.⁵⁶ Using the above procedure, the Shanxi piaohao held the policy of ‘Dispatching silver from those with an abundance to those with a shortage [zhuoyingjixu, 酌盈济虚] and from places

⁵⁵ This can be evidenced by business letters from the RSC and WTH. Moreover, Wei (1944 pp.74-5) mentions similar finds.

⁵⁶ “In the late Qing dynasty, the postal service was varied and intensive. There were the national post offices run by the Qing government, foreign post offices run by the foreign merchants and civil postal office run by the Zhejiang merchants”, in *晚清邮政近代化与中央机关的调适—从总理衙门到邮传部* (*The modernization of the postal service in the Late Qing dynasty—from the Ministry of Foreign Affairs to the Post Office Department*), Ming Liu, 前沿 (Frontier), 2013, pp. 149-50. From their business letters, I have found that before telegrams were introduced to China in the 1880s, it normally took 7-15 days to deliver a letter; after telegrams became common, one could reach a piaohao within a day.

where the interest is low to those where it is high [choupizhuankuai 抽疲转快]’ to balance silver reserves and earn profits (Chen 1937 pp.89-90.).

Figure 2-3 Flows of information and silver between head offices and branches



Source: Compiled on the basis of the RSC and WTH business correspondence (Huang 2002a, pp.833-1216.).

Under a centralized management structure, the head office manager punished branch managers who disobeyed orders. From the RSC business letters, I found that in 1861 the head office send a punishment notification to Werong, the Suzhou branch manager, who ignored the head office order to close his branch during the Taiping Rebellion and incurred a loss. As the letter states:

“Among all the branches managers, only Rong did not listen to the order to close Suzhou branch and delayed my command as he wanted. His behaviour resulted in one customer Xue Lanting did not pay back his loan. Once before, when Rong worked as a branch manager in Chengdu, he also did not obey the order from the head office, which left the Chengdu branch over Tls. 2,000 in arrears to the head office. Since Rong is not in good health at present, consider his past performance. The head office has decided to dismiss Rong and his two employees (Huang 2002a, p.608).”

In addition to this letter, on 24th, 28th April and 13th May 1862, the RSC head office sent three letters to the Guangzhou branches, to warn the branch manager who had

contravened the policy from the head office and continued to sending remittance drafts to the Kaifeng branch where there was a severe shortage of silver. The head office manager insisted if the Guangzhou manager continues to flouting the orders from head office, he will be punished for violating the regulations of the firm (Huang 2002a, pp.853-4).

The above letters together clearly show that it was the head office manager that has the absolute power in the piaohao and it was him who can make final decisions on business and personnel arrangement. Since the transmission of information was costly during the Qing dynasty, given the state of communication technology in the late Qing period, it was cheaper and more efficient to transmit all the information at once to a central point than to disseminate it item by item to everyone. For the same reason, it was cheaper for a central individual to make collective decisions and transmit them than to retransmit all the information on which the decision was based. After grasping the information of operations and employees behaviours of all the branches, head office managers could make decisions which he deserved right.

By imposing a centralized structure, the Shanxi piaohao overcame the weakness on the typical M-form structure. The branch manager was given certain degree's operational rights based on the local market information, at the same time, the head office manager was informed promptly of branch operating conditions and made decisions for the benefit of the whole piaohao. This structure also enabled the piaohao head office gather limited capital to meet different silver needs of different branches, at the same time, it also ensured objective consistency for the whole firm. To carry out head office manager orders, comprehensive and strict regulations are necessary; therefore piaohao regulations are reported in the next section.

2.2.2.2 Rules, regulations and fiats

As well as designing a centralized management structure, the Shanxi piaohao also imposed strict regulations to ensure head office orders could be carried out in full. These regulations aimed to eliminate all the possible avenues that might tempt a distant employee to behave opportunistically. As Williamson (1985,p.149.) points out, binding oneself is a privileged way of resolving the problem of weakness of will. The

temptation to take advantage of not being supervised could be resisted by distant employees if they were isolated from activities which might encourage cheating. As Shanxi piaohao have more or less similar regulation codes, my thesis takes DDT piaohao 1898-1912 regulation codes to illustrate them all:

“A regular business correspondence reporting system to the head office and other branches is crucial for our business success. Only if the head office grasps the overall business operation condition, can it make the right decisions. Therefore, when making small business transactions, branch offices can make their own decisions. However, when making large business transactions, branch managers are required to report to the head office before they make decisions. Otherwise, we may have trouble in meeting tight silver reserve conditions.

When employees leave home to work in the branch offices, all the head office should check their personal belongings. When they come home on leave, they should go to the head office for their personal belongings being checked again before going home. If these employees help other employees to carry goods home, these goods should be left with the head office to register and check; then the head office will forward these goods to the employees’ family.

Employees are forbidden to send any goods home privately. All the goods should be sent to the head office first to be checked, and then the head office will forward these goods to their family.

Employees are forbidden to visit the head office manager’s family and give presents to the head office manager.

Employees are forbidden to marry non-Shanxi women, get married in another city or take family members to another city while on duty. The employees’ salaries and dividends are paid by the head office directly to the employees’ family members in Shanxi. Branch employees should dine and live in the piaohao every day.

Employees are forbidden to gamble, take opium, or lend money to other employees of the piaohao. They are also banned from setting up another business, or storing commercial goods such as silk and crude drugs for sale.

If anyone breaks one of these regulations, depending on the seriousness of his offence, he will be punished or dismissed. If the branch managers shield employees' misbehaviour or if branch managers collude with their employees, they will all be dismissed together and will never be employed again. These regulations will be put into practice on a trial basis for three years. If the branch offices find any article difficult to execute, I can modify the article in the interests of earning a long term profit (Huang, 2002a, pp.595-602.)."

These regulatory codes show that the Shanxi piaohao imposed stringent rules to discipline employees' behaviour which were more than empty phrases. From the RSC business letters, I have found frequent mention, along with the business correspondence, of family letters or goods sent on behalf of individual employees, or employees who had resigned but not returned to the family, or who wanted to get married.⁵⁷

By requiring employees to marry in their hometown and forbidding them to take their family to the town where they worked, the piaohao were virtually treating these families as hostages. If any employee cheated, his family or guarantors in his hometown had to pay for his misdeeds (Peng, 2007, p.661.). Requiring employees to live and dine in the piaohao was another way to monitor their daily behaviour. These regulations reinforced one another and almost cut off any possibility of cheating.

Although these rules are strict, sometimes piaohao also showed a humane side to the employees. For example, the DDT piaohao regulates that when urgent family matters arose, employees could ask for leave and the piaohao would pay his travel expenses.

⁵⁷ Among much evidence the following may be listed here: Pingyao to Guangzhou branch letter on 23rd January 1862 (Huang, 2002a p.850), Pingyao to Zhoujiakou branch letter on 4th July 1892 (Huang, 2002a p.894-5.), and Pingyao to Xian branch letter on 26th May 1892 (Huang, 2002a p.889.).

WFH piaohao Beijing manager Li Hongling asked the head office if the marriage leaves could be prolonged for one of his employees Guo Peijin, who had worked in the Beijing branch for two years and had not been home once (Li, 1917, p.73.).

The above analyses suggest that the piaohao's vertical management was centralized and strict. To complete this vertical structure, they also designed what this dissertation terms a 'horizontal management structure' to prevent employees from cheating. This mechanism is illustrated in the next section.

2.2.3 Horizontal management structure—a guild system to collectively punish misbehaved employees

Chinese merchant guilds were normally formed spontaneously by merchants who undertook the same business in the same city. Merchants who belonged to the merchant guild would enjoy the protection from the guild but also have responsibilities. The functions of the merchant guilds included negotiating with the government, accepting business on behalf of merchants, as well as drafting and enforcing the guild regulations (Quan, 2007, pp.1-3). As most Chinese guilds had strong power so that they could control the whole industry and could unite other guild merchants to crowd out the merchant who did not join in the guild, in order to undertake their business safely and efficiently, most merchants would join in as soon as they started their business (Peng, 1995, Liu, 1988). Moreover, in an environment which absence of commercial legislation, merchant guilds played roles in protecting and regulating commercial activities (Quan, 2007, Peng, 1995). In this situation, merchants would like to donate the fund regularly to the guild and obey the regulations in order to maintain its operation and seek the protection (Peng, 1995, Liu, 1988).

Similar with the other Chinese industries, the Shanxi piaohao established piaohao guilds in such business centres as Beijing, Shanghai, Suzhou, Guangzhou and Hankou. They raised funds to establish their own guild hall and built stone tablet to record the reason and date that they formed the guild, the location of their guild hall and their members. In each guild, piaohao branch managers were members and they would elect two to three members as directors to charge the operations of the guild.

To acquire the permission and support from the government, they also invited government officers as their honour directors. Since the Shanxi merchants worshipped the memory of Guangong [关公], a Chinese historical warrior famous for his righteousness and loyalty to his brotherhood, these Shanxi merchants called their guild hall as Guangong temple (Huang 2002a, p.671.).⁵⁸

In piaohao guilds, members held meetings on the first and fifteenth of every month; branch managers from different piaohao should attend and discuss issues in which they are concerned. If any member cannot be present, he should ask the guild chairman for leave in advance and wait for permission. Issues discussed in the meetings include the remittance commission rate, interest rate and local market conditions. If quarrels arise between piaohao, guild members should elect two or three chairmen to mediate (Dagong Newspaper, 1904, cited in Huang, 2002a, p.674.).

Besides discussing business, referring to the piaohao correspondence, I found they also shared employees' cheating behaviour with others. In 1895, RSC Tianjin branch employee Wang Yurui absconded with Tls. 1,870. He was arrested by other employees when he tried to run off and was detained in the branch. Tianjin branch manager suggested the head office send Wang to the local court for conviction, but in the head office manager reply letter it wrote: *"During these days custody, Wang has paid back the silver he steal, although the Tianjin office suggest me to send him to the court, after discussing with other piaohao managers, we think this suggestion is inconvenient and may cause other trouble. Therefore, we decide to punish him based on our own regulation disciplines (RSC business letter from Pingyao to Tianjin, 1895, cited in Huang, 2002a, pp.914-915.)."*

Besides sharing employees' cheating behaviour, piaohao also kept an eye on other piaohao distinguished employees. For example, in 1900 the WFH piaohao Beijing

⁵⁸ The existing evidence shows the earliest record of a piaohao guild to have been in 1876, when 24 Shanxi piaohao in Shanghai invested Tls. 500 each to construct a Guangong temple and established the Shanxi Remittance Guild Hall [Shanxi huiye gongsuo 山西汇业公所] (Wei 1944, p.132). Their members included all the Shanxi piaohao who had business in Shanghai. From the records of the piaohao guilds and their business correspondence, I have found piaohaos' remittance commission rates and interest rates were similar with each other.

branch manager Li Hongling wrote to the head office manager to report that an employee named Mao Lanting who was working in the Bai Chuan Tong piaohao and performed very well but did not get promoted for several years. Because of this, Mao intended to change his job to other piaohao. As soon as obtaining this information, Li asked the head office manager that if he could ask Mao to work in their piaohao with a higher position and payment (Li, 1917 p.80.). Later on, as the guarantor, Li recommended Mao to work as a Changde branch manager of the WFH. Although in his later letters, Li indicates that Mao was not as good as he expected and was suspected of misbehaviour, this letter still reflects the fact that the piaohao had information on the behaviour of other employees at the same time.⁵⁹

Since the business correspondence frequently sent by the piaohao branch managers to the head office managers, they could report everything discussed in the guild meetings. Whether an employee performed well or was guilty of cheating, information about him would travel quickly around a piaohao guild. On obtaining such information, other Shanxi piaohao could either collectively punish cheaters and never employ them again or poach excellent employees who were not being treated well in other firms. With a guild and a correspondence reporting system, the piaohao transcended the limits of the single piaohao to monitor employees' behaviour and encouraged employees to work hard and with probity for the sake of themselves and their future career opportunities.⁶⁰

2.3 Areas of risk—the central planners' dilemma

In the Shanxi piaohao, shareholders had no rights over the piaohao operation; instead it was the head office managers who had supreme power over it. Therefore, the success of a piaohao lay precisely in the morality and ability of the head office

⁵⁹Besides WFH, I have also found that other Shanxi piaohao competed to invite Re Licheng, the branch manager of the Tian Cheng Heng piaohao after learning that Ren had been treated unjustly and was planning to leave. The DDH piaohao also invited Yan Weifan, a common employee of the WCH piaohao, to work as the DDH head manager; he later became the first head manager of the Shanxi Provincial Bank (Deng, 1997 pp.172-196).

⁶⁰In traditional Chinese society, merchants preferred to hire local people, which made it costly for anyone who had cheated to enter a bank in another region (Landa, 1988).

manager. In this section, the dissertation explores the potential dangers of the piaohao's management structure.

Before the shareholders appointed a head office manager, they would investigate his past work experience, interview him and ask his business ideas. If the shareholder were satisfied with the candidate's performance, he would invite him to become the head office manager (Jie, 1936, cited in Huang 2002a, p.593).

The Shanxi people emphasised loyalty to the brotherhood, so the shareholders would believe in a head office manager's character and ability when they had appointed him, and the head office manager would work hard to repay the shareholders' trust. Even if the piaohao suffered occasional losses, shareholders would not blame the head office but gave the manager enough capital to start again. Except in special circumstances, shareholders could not dismiss the head office manager whenever they chose. It was only at the end of the fiscal year (3-4 years), that they could decide whether they would retain him (Jie, 1936, cited in Huang 2002a, p.594.).

Most Shanxi piaohao were established during the period between the 1820s and the 1880s, when there was no modern Chinese bank and the scale of foreign banks was small.⁶¹ At this time, the Shanxi piaohao also operated on a medium scale, each piaohao having 15-20 branches nationwide.⁶² Besides, unlike the later period when the descendants of many shareholders were addicted to opium and left the piaohao in the hands of the head office managers, these shareholders were still able to control the head office managers.⁶³ In these circumstances, the agency relationship between the shareholders and the head office manager was relatively stable, and the head office manager could manage the operation of the whole piaohao.

⁶¹ The rise of modern Chinese banks and foreign banks is illustrated in Chapter 6, below.

⁶² According to my estimation, in Figure 5-2 between the 1840s and the 1880s, the annual remittance volume for all the Shanxi piaohao remained under Tls. 104 million. However, this value grew to Tls. 187 million in the 1890s, and climbed further, to Tls. 252 million in the period 1902-9.

⁶³ As illustrated in Table 6-8, below, many of the former piaohao shareholders' descendants became addicted to opium, lived extravagantly and left the head office managers to look after the piaohao.

Since the 1890s, the Shanxi piaohao's business increased dramatically,⁶⁴ and their branch networks also expanded to the point where each piaohao had on average 22-26 branches.⁶⁵ But from the 1890s official banks were set up and foreign banks augmented their business of international remittances to China's domestic remittance business (Wang, 1983, p.188.). In this drastically changed environment, the Shanxi piaohao head office managers gradually reached the limits of their professional competence and their centralized management began to show diminishing returns. Focusing on their attitudes toward the piaohao reform, the following paragraphs outline how these head office managers' arbitrary decisions deprived the piaohao of the chance to form joint-stock banks. This decision was regarded as a fatal mistake, leading to the piaohao's decline (Li, 1917 p.79, Chen, 1937).

In the face of competition from foreign banks and official banks, Beijing piaohao guild wrote a letter in 1908 to the head office managers:

“Our Shanxi merchants have won fame both at home and abroad specializing in remittance. However, after the Boxer Rebellion, the expansion of official banks has deprived us of government business, and the proliferation of foreign banks into inland cities will certainly influence our commercial remittances. Moreover, this year the Ministry of Finance has promulgated the Universal Rules for Banks [yinhang tongxing zeli 银行通行则例] and requested us to register with them to qualify for business. At this rate, we shall soon be eliminated. After several days' meeting, we have concluded that only by uniting together and forming a bank we can be saved. Forming a bank will not only enable us to compete with foreign banks with stronger capital power and a larger business network, but will also benefit us as a bank, e.g. we will be able to request loans to be backed by material guarantees, which as piaohao we cannot do. Moreover, as shareholders in a bank we would have only limited liabilities; even if we suffered loss, it would be only

⁶⁴ Based on my estimation in Table 5-4, below, from the 1880s and the 1890s, the annual volume of remittances for all the Shanxi piaohao increased from Tls. 104 million tls to Tls. 187 million; this growth rate was faster than in any previous period.

⁶⁵ When plotting the places where RSC piaohao operated from their business correspondence, I have found that in the 1880s the RSC had drafts in 22 cities, rising to 42 in the 1890s.

*what we have invested—Beijing Piaohao Guild on 23rd March 1908 (Li, 1917, cited in Huang, 2002a, p.399.).*⁶⁶

In later letters, Li mentions that when they received no response from the head office, the Beijing piaohao guild elected Liang Huaiwen, the RSC Beijing manager, to return to Shanxi to discuss this issue with the head managers. At the same time, the Beijing guild sent messages to the piaohao guilds in other cities and asked them to persuade the head managers to reform the piaohao (Li, 1917, cited in Huang, 2002a p.400.). These requests quickly got a response from other branches. The piaohao guilds including Hankou, Chongqing, Guangzhou, Shashi, Chengdu, Lanzhou, and Jinan also wrote round to the head offices to persuade them to form a joint-stock bank (Li, 1917, cited in Huang, 2002a, pp.401-9.).⁶⁷ Beside the piaohao branch managers, reformists Liang Qichao, Shanxi Jining Intendant [jining daotai 冀宁道台] Ding Baoquan also encouraged the Shanxi piaohao to reform (北京日报 [Beijing Daily Newspaper], 1906, cited in Huang, 2002a, p.397.).

However, because of the opposition of Mao Honghan, the WTH piaohao head manager, who was regarded as the leader of all Shanxi piaohao, none of the other piaohao head managers revealed their attitude to this proposal, and they decided not to report it to the shareholders (Li, 1917, cited in Huang, 2002a, p.409.). As Mao said: “Forming a bank is one of Li’s own plans to get rich. If other branches send similar suggestions in the future, just shelve them (Li, 1917, cited in Huang, 2002a, p.409).”

Although there is no clear evidence to show why Mao refused to reform, this study would conjecture that the main blame lies with his refusal to give up his own unlimited power. If Mao had agreed with the Shanxi piaohao to form a bank, he and the other piaohao head managers would have risked not being appointed as its chief manager. Therefore, instead of accepting this proposal, they decided to reject it. On

⁶⁶ Li Hongling was the Beijing branch manager of the WFH piaohao, who also initiated the reform of the piaohao in general.

⁶⁷ According to Li (1917, cited in Huang, 2002a p.409), although the Mao family finally agreed to let the Shanxi piaohao form a joint stock bank in 1921 and visited the Shanxi provincial officials to negotiate its terms, it was too late for them.

top of this, their long stay in three Shanxi towns also limited their vision and power to innovate in a fast-changing environment.⁶⁸

If we define the total organizational cost as equal to the cost incurred by the inconsistent objectives plus the cost of depending on poor information (Jensen 1998, p.116.), then in the Shanxi piaohao, which had a highly centralized management structure, the cost of having inconsistent objectives was low but the cost due to poor information increased as the reliance on it increased.

From the WFH business letters in the 1900s, I have found that out of 88 business letters, about 20 mention employees' poor performance; i.e. that they were much lazier than before, or they embezzled customers' deposits. To make matters worse, head office managers also began to shield employees' misbehaviour. In 1915, a branch office manager of the WFH piaohao Guo embezzled Tls. 30 thousand. Although his misbehaviour was known by others, due to his special relationship with head office manager Wang Xinghuan, Wang covered up for him for a long time. It was until other piaohao managers who had business connections with the WFH blamed Wang's favouritism; Wang dismissed Guo and demanded him to pay the loss. At last, Guo committed suicide, which left his debt was unpaid (Li 1917, p.286.). Besides the WFH, the RSC piaohao head office manager Guo Dounan ran away when the piaohao faced squeeze and on a verge of bankruptcy in 1911 (Dagong Newspaper cited in Huang, 2002a p.519.).

2.4 Concluding remarks

The above analysis has shown how the piaohao protected shareholders' capital by disciplining their distant employees in a weak legal environment. By investigating the employees' background and promoting employees within the firm, the piaohao merchants had sufficient time to observe each one's morality and ability. Moreover, a centralized quasi-M-form structure and comprehensive rules allowed their networks

⁶⁸ In his letter to the head office, Li tried to persuade the head office managers and shareholders to go beyond Shanxi and take a tour of the country or even overseas. However, there is no evidence that they did this (Li, 1917 p.74.).

to expand but prevented the head offices from losing control of the firm. In addition, by sharing employees' behaviour through guilds and imposing collective punishments on cheaters, the piaohao further encouraged employees to be loyal for the sake of their future career opportunities.

This management structure was effective in disciplining employees' behaviour when the piaohao operated on a medium scale without competitors. However, when the piaohao embarked on large-scale operations and the external business environment became more unpredictable, the power of these managers reached the limits of their professional competence and this central management structure began to show diminishing returns. Moreover, in its later period, these head office managers misused their power, which corroded the piaohaos' management structure.

Besides a rigorous management structure, the piaohao also needed a compelling incentive structure to attract and keep excellent employees who would stay and work hard. This incentive structure is critically studied in the next chapter.

Chapter 3. Incentive mechanism: how did the piaohao unite shareholders and employees' interests?

This chapter examines the Shanxi piaohao's mechanism for offering incentives. By examining the piaohao's income structure, pay structure and individuals' earning profiles, this chapter for the first time quantitatively demonstrates the importance of the expertise share in an employee's total income. Moreover, through comparing the lifetime incomes for employees with different career choices, it also shows the impact of the emergence of modern banks and of the prospects for a Shanxi piaohao employee's career path. Besides this, in this chapter, I test whether the piaohao's incentive structure accords with a tournament model; that is, to improve employees' performance by paying them on the basis of their rank in the firm. Before reaching a conclusion, the present chapter explores the dynamic change in the Shanxi piaohao management and incentive structure, in an attempt to explore why this governance structure worked well at first but began to malfunction during the last period of the banks' operation. Combining much data at firm level with economic models, the following analyses are distinct from all those in previous studies and shed new light on our understanding of the piaohao's incentive mechanism.

3.1 Understanding the piaohao's income and pay structure

In the Shanxi piaohao an employee's total income normally consisted of a basic allowance [yiziyin 衣资银], salary [xinjin 辛金] and expertise dividends [hongli 红利]. The basic allowance was the money given to employees to cover their daily expenses. It ranged from Tls. 0.5 to Tls. 2 per month, and was paid monthly. The salary ranged from Tls. 30 to Tls. 100 per annum, and was paid normally every six months to the employee's family in his hometown. To employees with excellent performance, the piaohao shareholders would grant an expertise share [shengu 身股], which paid the same dividends per share as the shareholders' capital share [yingu 银

股].⁶⁹ The expertise share can be further divided into a normal expertise share, which was paid to employees according to their performance; and a bygone share [gugu 故股], which was normally given for past good performance for 3-4 years to retired employees or the families of deceased ones. Expertise share dividends were paid at the end of each fiscal year; the piaohao valued one share as 1 fen, and divided 1 fen into ten or twelve grades, each grade being called 1 li (Chen 1937, pp.87-8.).

Table 3-1 shows descriptive results for the Xie Cheng Qian⁷⁰ (XCQ, hereafter) and Bao Feng Long⁷¹ (BFL, hereafter) piaohao payroll lists in the years 1906 and 1910 respectively.

Table 3-1: Descriptive results of the XCQ and BFL piaohao's annual payroll lists (Tls)

	Obs	Max	Min	Mean	S.d.
XCQ in 1903-6					
Staff with basic allowance ^a	16	6	6	6	0
Staff with basic allowance and salary	56	108	8	40	26
Staff with basic allowance, salary and expertise dividends ^b	32	2,100	278	866	569
BFL in 1906-10					
Staff with basic allowance ^c	36	6	6	6	0
Staff with basic allowance and salary	69	108	14	52	26
Staff with basic allowance, salary and expertise dividends ^d	26	628	182	290	145

Sources: Based on Huang (2002a, p.605, pp.1222-4.)

⁶⁹ According to Wei (1944), the decision to distribute expertise shares was made by shareholders who based employees' performance on the report of the head office manager. Although there is no clear evidence described how the head office manager judged employees' performance, it is highly likely, going by the piaohao's account books and business correspondence that the head office managers evaluated branch managers' performance on the basis on their branch's profits, and the branch managers' letters to the head office managers reflected branch employees' performance.

⁷⁰ "The XCQ (1860-1913) was set up by seven Shanxi merchants in Pingyao town. Its paid up capital was 60,000 tls, which increased to Tls. 240,000. In its most prosperous period, it paid Tls. 11,000 per fen to shareholders. This piaohao closed in the wave of piaohao bankruptcies in 1913", in *山西票号史 (A history of the Shanxi piaohao)*, Jvxian Wei, (中央银行经济研究处 (Economic Research Department of the Central Bank)), 1944, p.16.

⁷¹ "BFL (1906-21) was founded by two Shanxi merchants and one Qing official in Pingyao town. Its founding capital was Tls. 260,000", in *平遥票号商 (Pingyao Piaohao merchants)*, Quan Deng and Zhengming Zhang, (山西教育出版社 (Shanxi Educational press)), 1997 p.168.

^a The XCQ payroll list does not provide basic allowance information on staff who were paid this alone, without any salary or dividend. Therefore, this dissertation assumes that these members of staff earned the minimum basic allowance, Tls. 0.5 per month.

^b In 1906 XCQ distributed Tls. 2,000 per fen as dividends.

^c Like the XCQ, the BFL also provides no basic allowance information on staff who were paid it without any salary or dividend. Therefore, this dissertation assumes that these members of staffs earned the minimum basic allowance, Tls. 0.5 per month.

^d As a newly established piaohao, in 1906 BFL distributed Tls. 520 per fen as dividends.

The table above shows that in the XCQ, of its 104 employees, 16 received only the basic allowance, 56 employees had a salary in addition but no dividends; and 32 employees had expertise shares, salary and the basic allowance. In the XCQ, as soon as employees moved from basic allowance to the regular payroll, their salary increased many times over, ranging from Tls. 8 to Tls. 100. But the most striking increase in their income follows their being awarded expertise shares, when their total income could range from Tls. 278 to Tls. 2,100. The average annual income for those who were paid only the basic allowance was Tls. 6 per annum, while for staff with the basic allowance and salary it was Tls. 40 and for staff who had all three types of income it was Tls. 866.

In the BFL piaohao, Table 3-1 illustrates that, of its 131 employees, 36 earned the basic allowance of Tls. 6 per annum, 69 employees had the basic allowance as well as salary, which ranged from Tls. 14 to Tls. 108, and 26 of them earned all three types of income, with values varying from Tls. 182 to Tls. 628. The average annual income for staff with only the basic allowance was Tls. 6, for staff who had the basic allowance and salary it was Tls. 52 per annum, and for staff with the basic allowance, salary and dividends it was Tls. 290 per annum. In the XCQ, the pay gap ratio between those who had the highest income and those with the lowest was 1: 525, while in the BFL this ratio was 1:157.⁷²

⁷² When comparing these piaohao pay gap ratios with the pay gap ratio in 2012 for CEOs and employees in American and British investment banks, this thesis found that the latter varied between 1: 125 and 1:383 (Decarlo 2012). The ratio in modern Chinese listed banks in 2012 was about 1:18 (Liu 2012). This suggests that the Shanxi piaohao payment gap is similar to that in American and British investment banks, and much larger than the pay gap ratio in Chinese listed banks nowadays.

Based on their dividend distribution lists, Table 3-2 illustrates the total income composition of the expertise shareholders in the XCQ, BFL, and DDT ⁷³ piaohao in different years. It shows that over time the salary difference between piaohao was small. Annual salaries for the DDT expertise shareholders varied from Tls. 50 to Tls. 200 and for the XCQ and the BFL these values ranged between Tls.70 and Tls.100. However, unlike the salary, the difference made by dividends was great. For example, compared with the DDT and the XCQ, the BFL distributed a relatively small dividend due to a short set-up period. Between 1889 and 1908 the DDT's dividends per share experienced a rise from Tls. 850 to Tls. 17,000, and then declined to Tls. 8,000 in 1925. As the Shanxi piaohao distributed its dividends according to profitability, the varying profits reflected different business conditions for the piaohao. Moreover, when comparing these expertise shareholders' income structure, the importance of the dividends payment in increasing these employees' total income is evident. With increases of dividend distribution per share, as employees acquired more shares, their total incomes increased exponentially.

⁷³ “The DDT (1884-1940) was established by a Shanxi merchant Qiao Zhiyong”, Huang, *Archival materials of the Shanxi piaohao*, p.559. As one of the longest surviving piaohao, this piaohao is further discussed in 6.4.

Table 3-2: DDT, XCQ and BFL expertise shareholders' income structure (Tls)

	1 li	1.5 li	2 li	2.5 li	3 li	3.5 li	4 li	4.5 li	5 li	6 li	6.5 li	7 li	7.5 li	8 li	8.5 li	9 li	1 fen
DDT in 1884-9																	
Obs	0	0	6	0	4	0	2	0	2	3	0	1	0	0	0	0	2
Salary	n/a	n/a	50	n/a	60	n/a	70	n/a	70	80	n/a	90	n/a	n/a	n/a	n/a	120
Dividends ^a	n/a	n/a	170	n/a	255	n/a	340	n/a	420	510	n/a	629	n/a	n/a	n/a	n/a	850
DDT in 1905-8																	
Obs	0	8	4	0	14	0	5	5	7	1	3	2	0	0	1	2	3
Salary	n/a	60	70	n/a	80	n/a	100	100	100	120	120	140	n/a	n/a	160	190	200
Dividends ^b	n/a	2,550	3,400	n/a	5,100	n/a	6,800	7,650	8,500	10,200	11,050	11,900	n/a	n/a	14,450	15,300	17,000
DDT in 1921-5																	
Obs	14	3	1	5	3	2	1	0	0	3	0	2	2	0	0	0	4
Salary	60	60	70	70	80	80	100	n/a	n/a	120	n/a	140	140	n/a	n/a	n/a	200
Dividends ^c	800	1,200	1,600	2,000	2,400	2,800	2,400	n/a	n/a	4,800	n/a	5,600	6,600	n/a	n/a	n/a	8,000
XCQ in 1903-6																	
Obs	7	0	2	0	8	0	6	0	2	2	0	0	0	1	0	3	1
Salary	70	n/a	70	n/a	70	n/a	70	n/a	70	70	n/a	n/a	n/a	70	n/a	70	100
Dividends ^d	200	n/a	400	n/a	600	n/a	800	n/a	1,000	1,200	n/a	n/a	n/a	1,600	n/a	1,800	2,000
BFL in 1906-10																	
Obs	0	0	9	0	7	0	3	0	2	0	0	1	0	1	0	0	3
Salary	n/a	n/a	70	n/a	70	n/a	70	n/a	70	n/a	n/a	80	n/a	80	n/a	n/a	100
Dividends ^e	n/a	n/a	104	n/a	156	n/a	208	n/a	260	n/a	n/a	364	n/a	416	n/a	n/a	520

Sources: Based on Huang (2002a, p.605, pp.631-5, pp.1222-4.)

^a In 1889 XCQ distributed Tls.850 per fen as dividends

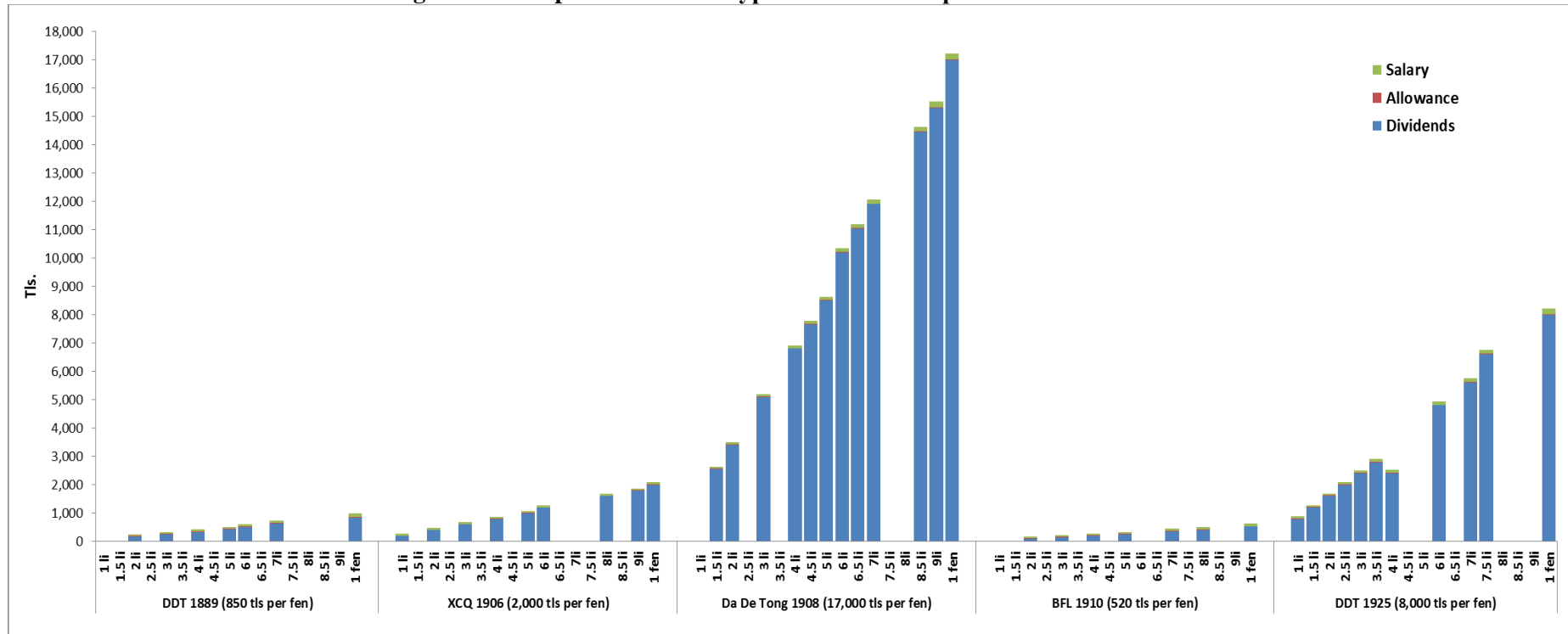
^b In 1906 XCQ distributed Tls.17,600 per fen as dividends

^c In 1925 XCQ distributed Tls.8,000 per fen as dividends

^d In 1906 XCQ distributed Tls.2,000 per fen as dividends

^e In 1910 BFL distributed Tls.520 per fen as dividends

Figure 3-1: Proportions of each type of income in expertise shareholders' total income



Sources: Based on Huang (2002a, p.605, pp.631-5, pp.1222-4.)

Regarding the piaohao's pay structure, Table 3-3 shows the DDT, XCQ and BFL's pay structure, and summarised them in Table 3-4.

Table 3-3: Payment structure of DDT, XCQ and BFL piaohao

	Normal expertise share					Bygone share			Salary and basic allowance					Basic allowance
	1 fen	7-9 li	5-6 li	3-4 li	1-2 li	7li-1 fen	3-4 li	1-2 li	Tls. 80-100	Tls. 50-70	Tls. 30-40	Tls. 10-20	Tls. 0-9	Tls. 6
DDT in 1884-9	2	1	3	7	6	1	1	1	n/a	n/a	n/a	n/a	n/a	n/a
DDT in 1905-8	2	6	15	14	6	2	3	1	n/a	n/a	n/a	n/a	n/a	n/a
DDT in 1921-5	3	3	2	14	15	2	1	1	n/a	n/a	n/a	n/a	n/a	n/a
XCQ in 1903-6	1	3	3	12	8	1	1	2	2	14	20	26	13	16
BFL in 1906-10	3	2	2	10	9	0	0	0	2	22	23	21	0	36

Sources: Based on Huang (2002a, p.605, pp.631-5, pp.1222-4.)

Notes: Unlike the XCQ and BFL which have complete payroll lists for all members of staff, DDT left payroll lists of its expertise shareholders only. Therefore, the payment structure of the DDT applies to expertise shareholders alone.

Table 3-4: A summary of the DDT, XCQ and BFL's pay structure

	Normal expertise shareholders	Bygone shareholders	Staff with basic allowance and salary	Staff with only basic allowance	Total
DDT in 1884-9	19	3	n/a	n/a	22
DDT in 1905-8	43	6	n/a	n/a	49
DDT in 1921-5	37	4	n/a	n/a	41
XCQ in 1903-6	27	4	91	16	122
BFL in 1906-10	26	0	104	36	130

Sources: Based on Huang (2002a, p.605, pp.631-5, pp.1222-4.)

As Table 3-3 suggests, for all three piaohao, the number of employees who earned the highest expertise share (1 fen) was small. With every decrease in the total value of expertise shares, the number of employees who owned shares grew. For most expertise shareholders, their shares amounted to 3-4 li, except for the dividends distributed by the BFL, DDT and XCQ granted shares to retired employees. These bygone shareholders occupied about 10% of the total expertise shareholders in both of the latter piaohao.

Regarding the members of staff who earned only salary and basic allowance in the XCQ and BFL, their pay structure followed the normal distribution: the numbers of employees who earned the highest (Tls. 80-100) and lowest incomes (below Tls. 9)

were relatively small, and the number of employees who earned an income at the middle level (Tls. 10-70) was large.

The ratio of expertise shareholders to salary owners and basic allowance earners can be seen in the XCQ to have been 3:6:1, and, in the BFL, to have been 2:5:3. These results indicate the most employees in these two piaohao earned salaries but no expertise share dividends.

Due to the limited sources, this dissertation is able to trace only that the employees who earned the highest expertise share were head office managers of these piaohao; no further information is available on the position of other employees. However, on the basis of the piaohao's vertical management structure (Figure 2-2), it can be inferred that the XCQ which had about 20 branches, could have one head office manager, two vice-head managers, and 20 branch managers. Since there were 27 normal expertise shareholders in the XCQ at this time, it means that four employees who had no managerial position earned dividends as well as the managers.⁷⁴

The BFL piaohao was on a similar business scale to the XCQ's, with about 20 branches in operation (Deng, 1997 p.168.). In 1910 it distributed normal expertise shares to 26 members of staff, which implies that, besides the 23 employees with managerial positions, three employees were entitled to dividends.

The number of branches of the DDT piaohao was similar to those of the XCQ and BFL (Wei 1944, p.55.). However, except for 1889, its first fiscal year, in which 22 employees had expertise shares, in 1908 and 1924 more than 40 members of staff in the DDT were entitled to dividends. These numbers indicate in addition to the head office and branch managers, at least ten other employees received dividends. Here it is worth mentioning that, unlike the other Shanxi piaohao which went bankrupt in the 1910s, the DDT, together with two other Shanxi piaohao, survived the 1911 Revolution and continued to operate until the 1930s. Having a different payment

⁷⁴ As my thesis illustrates, in the personnel arrangements (2.2.1), accountants and amanuenses had high status in the piaohao. Therefore, these four employees may have been accountants or amanuenses.

structure, not to mention its shareholders' strong capital, may account for its longer survival.⁷⁵

Using the DDT dividend distribution lists, Table 3-5 lists the employees who held expertise shares continuously from 1889 to 1925.

Table 3-5: DDT employees who had expertise share in 1889, 1908 and 1925 (Tls)					
	Dividends	Expertise share		Dividends	Expertise share
Xu Tingzhu			He Xianxi		
1884-9	224	2 li	1889	0	None
1905-8	15,514	9 li (bygone)	1908	5,204	3 li
1921-5	0	None	1925	5,764	7 li
Lv Yonghe			Gao Yunhan		
1884-9	224	2 li	1889	0	None
1905-8	17,224	1 fen	1908	8,624	5 li
1921-5	0	None	1925	8,224	1 fen
Hao Quan			Liang Hao		
1884-9	339	3 li	1889	0	None
1905-8	177,224	1 fen	1908	5,204	3 li
1921-5	8,224	1 fen	1925	6,764	7.5 li
Gao Yu			Wang Zongyu		
1884-9	339	3 li	1889	0	None
1905-8	177,224	1 fen	1908	14,634	8.5 li
1921-5	8,224	1 fen (bygone)	1925	8,224	1 fen
Zhao Yuandiao			Zong Qihan		
1889	244	2 li	1889	0	None
1908	7,774	4.5 li	1908	2,634	1.5 li
1925	6,764	7.5 li (bygone)	1925	4,944	6 li (bygone)
Gao Yunzhao			Wang Zhenduo		
1889	0	None	1889	514	5 li
1908	5,204	3 li	1908	12,064	7 li
1925	5,764	7 li	1925	0	None

Source: On the basis of Huang (2002a, pp.631-5).

The table shows that, from 1889 to 1908, six employees were entitled to expertise shares and three of them still held expertise shares until 1925, by which time the remaining three no longer had these shares.⁷⁶ In addition, six employees who had no share in 1889 had become entitled to it in 1908 and 1925.

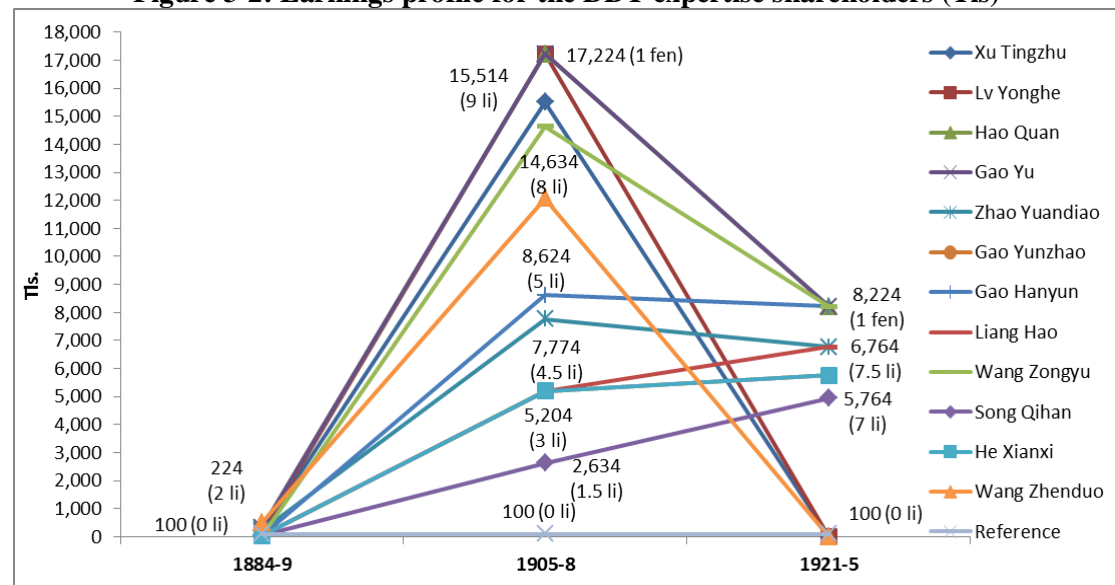
⁷⁵ The survival of the DDT and other two Shanxi piaohao is discussed in 6.4, below.

⁷⁶ “Gao Yu was the DDT head manager and Hao Quan was his successor”, in Huang, *Archival materials of the Shanxi piaohao*, p.573.

Based on Table 3-5 my thesis illustrates the earnings profile of these employees (Figure 3-2), it becomes clear that these employees' total income heavily depended on the number of expertise shares they held and how much was paid out each year in dividends. Employees with more expertise shares may add to their total income, but if the dividend payments decline, even if the shares increase in number, the employees' total income may still decline.

The reference line in Figure 3-2 represents an employee who had Tls. 100 as his total income per year from 1889 to 1925 but was paid no expertise share. By contrasting the expertise shareholders' income with the reference employee's income, it can be found that if an employee had no expertise share from 1889 to 1925, the payment gap between him and the expertise shareholders would widen as long as the shareholders acquired more expertise shares or the dividend payments increased.

Figure 3-2: Earnings profile for the DDT expertise shareholders (Tls)



Source: On the basis of Huang (2002a, pp. 631-635).

Note: This figure shows earnings profile of the employees with expertise shares for at least for two fiscal years. It does not plot those who only had expertise shares for one fiscal year.

The above diagram indicates that the piaohao distributed dividends were based on employees' tenure and performance. Employees Zhao Yuandiao, Gao Yu, and Hao

Quan, who worked for the DDT for 36 years, had a steady increase in their expertise share. Here it should be noted that as these piaohao developed they distributed an increasing share of their profits as dividends (Table 3-6) and the dividends disbursed to the employees caught up to that of distributed to capital shareholders (Table 3-7). Distributing substantial sums out of their profits to some degree deprived DDT of other business investment opportunities.

Table 3-6: DDT profits and total distributed dividends in 1884-9, 1905-8, and 1921-5 (Tls)

	Total profits	Total distributed dividends	Total distributed dividends / Total profits
1884-9	24,723	8,269	0.33
1905-8	743,545	408,000	0.55
1921-5	127,578	123,000	0.96

Source: On the basis of Huang (2002a, pp.631-5).

Note: As the XCQ and BFL did not report their profits in their payroll lists, the ratio of total distributed dividends / total profits for these two piaohao cannot be presented here.

Table 3-7: Shares of capital equity and expertise equity in 1884-9, 1905-8, and 1921-5

	Capital share	Expertise share
1884-9	20	9.7
1905-8	19	25
1921-5	17.5	15.3

Source: *ibid.*

3.2 Functioning of the piaohao's incentive structure

The above analyses show that the expertise share played an important role in incentivising employees who could earn this by their excellent performance and long tenure. In this section, by comparing the lifetime incomes of the employees with different career choices and discounting these employees' lifetime income, I explore the functioning of the piaohao's incentive structure.

The data that this section employs come from the DDT piaohao. Based on its dividend distribution (Table 3-6) in each fiscal year from set-up to 1933,⁷⁷ I deduce that there were six types of employee in the DDT:

Type 1: An employee who received an average annual salary of Tls. 100 in the DDT but had no expertise share and remained in the DDT until 1933, when it no longer distributed dividends.

Type 2: An employee who received an average annual salary of Tls. 100 in the DDT but had no share and left for a modern Chinese bank in 1926 when the DDT dividend payment slumped. The annual income that this employee would have earned in a modern bank was Tls. 70 per year.⁷⁸

Type 3: An employee who received an average annual salary of Tls. 100 in the DDT but had no share and joined a modern Chinese bank in 1913 during the Shanxi piaohao's wave of bankruptcies. The annual income that this employee would have earned in a modern bank was Tls. 70 per year.

Type 4: An employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He stayed at the DDT until 1933, when it no longer distributed dividends.

Type 5: An employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He left for a modern Chinese bank in 1926 when the DDT dividend distribution slumped. The annual income that this employee earned in a modern bank would have been Tls. 200 per year.

Type 6: An employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He left for a modern Chinese bank in 1913

⁷⁷ The reason why this thesis does not provide the DDT dividend distribution after 1933 is that after this year DDT suffered from deficits and left no information on their dividend distributions.

⁷⁸ According to “上海银行行员服务待遇规则 [Regulations of the Shanghai Bank's staff members' salary and bonus]” that a normal member of staff was paid Tls.40-90 per annum, see *Banking in modern China: entrepreneurs, professional managers, and the development of Chinese banks, 1897-1937*, Linsun Cheng, (Cambridge University Press), 2003, p.178.

during the piaohao's bankruptcy wave. The annual income that this employee would have earned in a modern bank was Tls. 200 per year.⁷⁹

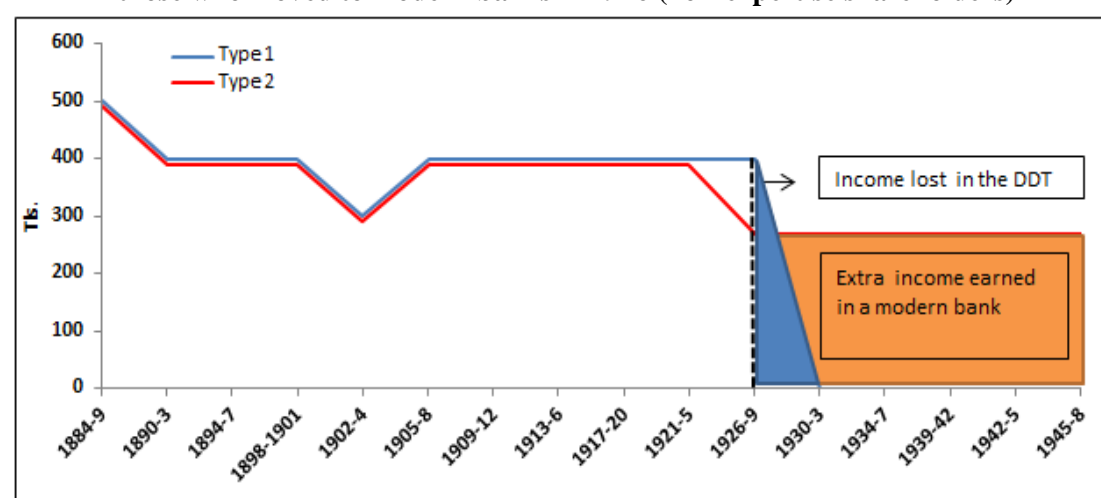
This assumption allows me to plot the total income difference for these six types of employees (see Figure 3-3, Figure 3-4, Figure 3-5, and Figure 3-6).

Table 3-8: DDT dividend payments in each fiscal year (Tls)

	1884-9	1890-3	1894-7	1908-1	1902-4	1905-8	1909-12	1913-6	1917-20	1921-5	1926-9	1930-3
Dividends per fen	850	3,040	7,321	11,900	15,130	17,000	17,190	15,070	11,590	8,000	1,407	0

Source: Huang (2002, pp. 631-633).

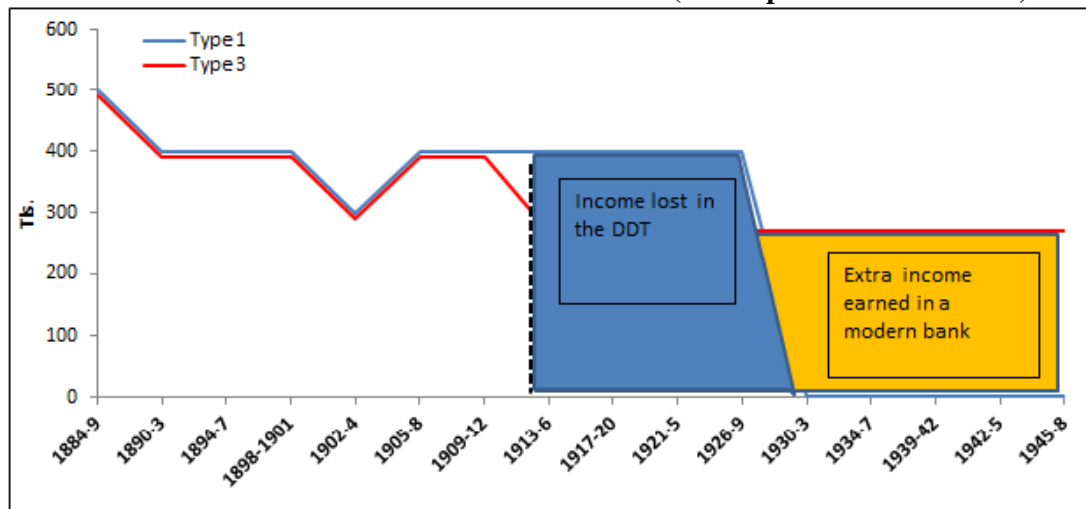
Figure 3-3: Total income difference for employees who stayed at the DDT until 1933 and those who moved to modern banks in 1926 (non-expertise shareholders)



Note: Type 1 is an employee who received an average annual salary of Tls. 100 in the DDT but had no expertise share and remained in the DDT until 1933, when it no longer distributed dividends. Type 2 is an employee who received an average annual salary of Tls. 100 in the DDT but had no share and left for a modern Chinese bank in 1926 when the DDT dividend payment slumped. The annual income that this employee would have earned in a modern bank was Tls. 70 per year. The annual income this employee earned in a modern bank was Tls. 200 per year. The reason why this figure stops at 1948 is that after the People's Republic of China was set up by the Communist Party, most banks were nationalised or moved to Taiwan.

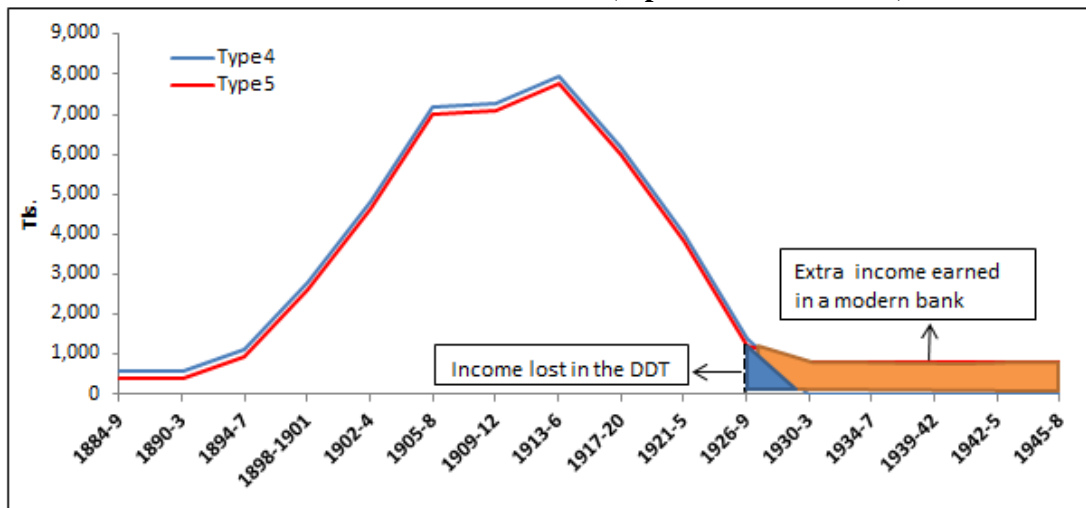
⁷⁹ Cheng (2003, p.178.) described a normal member of staff was paid Tls.40-90 per annum, as many piaohao managers joined modern banks at the rank of middle level managers who had expertise shares, this thesis assumes that these modern banks would have paid the former piaohao expertise shareholders Tls. 200 per year.

Figure 3-4: Total income difference for employees who stayed at the DDT until it closed and those who moved to modern banks in 1913 (non-expertise shareholders)



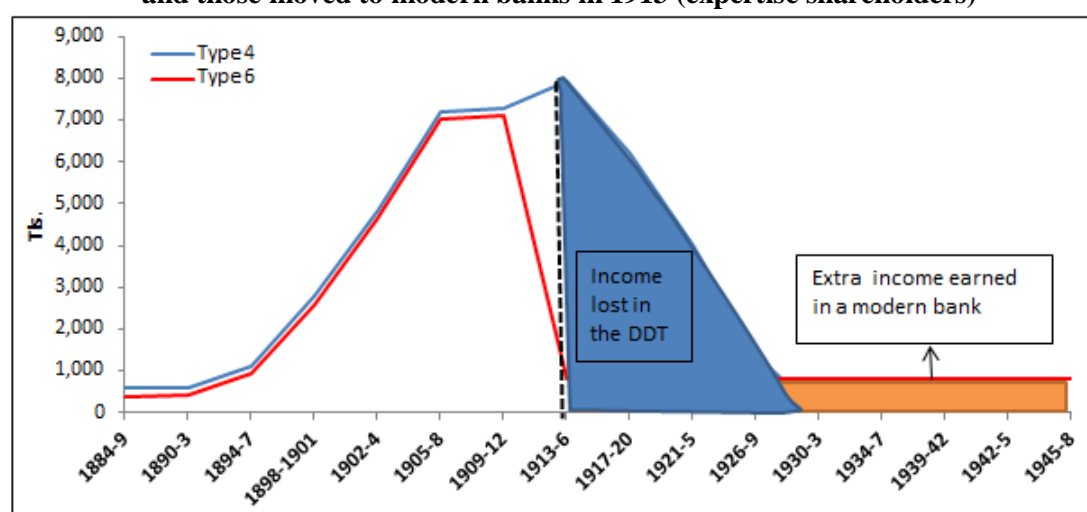
Note: Type 1 is an employee who received an average annual salary of Tls. 100 in the DDT but had no expertise share and remained in the DDT until 1933, when it no longer distributed dividends. Type 3 is an employee who received an average annual salary of Tls. 100 in the DDT but had no share and joined a modern Chinese bank in 1913 during the Shanxi piaohao's wave of bankruptcies. The annual income that this employee would have earned in a modern bank was Tls. 70 per year.

Figure 3-5: Total income difference for employees who stayed at the DDT and those who moved to modern banks in 1926 (expertise shareholders)



Notes: Type 4 is an employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He stayed at the DDT until 1933, when it no longer distributed dividends. Type 5 is an employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He left for a modern Chinese bank in 1926 when the DDT dividend distribution slumped. The annual income that this employee earned in a modern bank would have been Tls. 200 per year.

Figure 3-6: Total Income difference for employees who stayed at the DDT until it closed and those moved to modern banks in 1913 (expertise shareholders)



Notes: Type 4 is an employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He stayed at the DDT until 1933, when it no longer distributed dividends. Type 6 is an employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He left for a modern Chinese bank in 1913 during the piaohao's bankruptcy wave. The annual income that this employee would have earned in a modern bank was Tls. 200 per year.

As the above figures suggest, when the DDT dividends slumped in 1926 (Figure 3-3 and Figure 3-5), it would have been optimal for both non-expertise shareholders and expertise shareholders to leave for modern banks. This is because the total incomes they earned after going to modern banks were larger than the incomes they would have earned if they had stayed in the DDT. However, hopping to a modern bank was not always an optimal decision for the DDT employees. As Figure 3-4 shows, if a non-expertise shareholder had left the DDT in 1913 during the Shanxi piaohao's bankruptcy wave, the total income he would have lost from the DDT was almost equal to the extra income he would have earned from a modern bank. This loss would have been even greater for the expertise shareholder if he had left the DDT in 1913 (Figure 3-6). Therefore, whether hopping to a modern bank was an optimal career decision for the DDT employee or not depended on the prospects of the DDT and the salary paid in the modern bank in question. If the DDT could afford high dividends in the long run, it would have been better to stay in the DDT, while if the DDT could not do so and a modern foreign bank could pay a stable, decent future income, it would have been better for employees to leave for such banks.

Besides plotting these employees' lifetime incomes, this section also discounts these employees' lifetime incomes in order to find the rationale of their career choices. Assuming an employee's present value income at year t equals the discounting of his future remaining earnings (Jordan et al., 2001), the resulting value of a discrete income would be:

$$PV_t = \sum_t^T \frac{I_t}{(1+r)^{T-t}} \quad \text{Equation 3-1}$$

where PV_t is the present value of an employee's income at year t , I_t is the employees' total income at year t , r is the discount rate at year t and, T is the year that the employee stops working in a piaohao.⁸⁰

Based on this equation, Table 3-8 shows the present value of a DDT employee's lifetime income in 1884.

Table 3-9: Present value of a DDT employee's lifetime income

Type of employees	PV in 1884 (Tls.) ^a
Type 1 ^b	1,393
Type 2 ^c	1,438
Type 3 ^d	1,394
Type 4 ^e	9,523
Type 5 ^f	9,632
Type 6 ^g	7,571

Source: Huang (2002, pp. 631-633).

^a As the DDT opened in 1884, I assume these employees were first recruited to it when it opened and I discount their lifetime income to this year. Moreover, as in plotting the total income difference for these employees, the last year for discounting is 1948, when many banks left for Taiwan or were nationalized by the Communist Party.

^b Type 1: An employee who received an average annual salary of Tls. 100 in the DDT but had no expertise share and remained in the DDT until 1933, when it no longer distributed dividends.

^c Type 2: An employee who received an average annual salary of Tls. 100 in the DDT but had no share and left for a modern Chinese bank in 1926 when the DDT dividend payment slumped. The annual income that this employee would have earned in a modern bank was Tls. 70 per year.

⁸⁰ The discount rate my thesis uses here is the average of the highest (10%) interest rate and the lowest interest rate charged by the Shanxi piaohao (2%) which is 6% (Huang, 20002a, p.628.).

^d Type 3: An employee who received an average annual salary of Tls. 100 in the DDT but had no share and joined a modern Chinese bank in 1913 during the Shanxi piaohao's wave of bankruptcies. The annual income that this employee would have earned in a modern bank was Tls. 70 per year.

^e Type 4: An employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He stayed at the DDT until 1933, when it no longer distributed dividends.

^f Type 5: An employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He left for a modern Chinese bank in 1926 when the DDT dividend distribution slumped. The annual income that this employee earned in a modern bank would have been Tls. 200 per year.

^g Type 6: An employee who received an average annual salary of Tls. 100 in the DDT and had an increasing share payment. He left for a modern Chinese bank in 1913 during the piaohao's bankruptcy wave. The annual income that this employee would have earned in a modern bank was Tls. 200 per year.

The table shows that for the above six types of employee, Type 2 and Type 5 had the highest present value incomes while Type 3 and Type 6 had the lowest. These results are the same as the results from the above figures. When there was no modern bank, an employee who had no expertise share would anticipate that, if he earned the highest salary in the DDT, the present value of his lifetime income would be Tls. 1,393. However, when modern banks were set up and the DDT faced a profits decline and was about to close, an employee would find that the present value of his lifetime income would be higher if he moved to a modern bank than if he stayed in the DDT. However, if this employee misjudged the profitability of the DDT and moved to a modern bank too early, then the present value of his lifetime income would be lower than if he stayed at the DDT. These findings are consistent with the historical evidence that when the Shanxi piaohao were on the verge of decline, many employees left for the modern Chinese banks.⁸¹

⁸¹ As my thesis illustrates in 3.5, below, when the official banks and private banks were set up in the 1910s, members of staff in the piaohao, including the DDT manager Yan Weifan, the WCH manager Fan Yuanmao, and the Tian Cheng Heng piaohao manager Jia Fuchen jumped to modern banks to work (Fan, 1936, cited in Shanxi University of Finance and Economics, 2008, p.69).

3.3 A simplified tournament model testing the effectiveness of the piaohao's incentive structure

Tournament theory, which refers to payment differences, is due to the labourers' relative productivity rather than their marginal productivity. Under it, employees' salaries can be paid according to their rank in the firm, in order to persuade every employee to work hard to earn promotion and higher remuneration (Rosen, 1985, Bognanno, 2001).

Tournament theory proposes that different tiers of tournament may exist within a firm, so a worker who achieved highest level position in the first level tournament enters the next highest level of new tier of the tournament to achieve a higher position and remuneration (Rosen, 1985). As employees enter a higher level of the tournament, the scope for their future promotion diminishes. To replace this, a sharply increasing remuneration gap is provided; this explains why there is a convex payment structure and a big wage gap between first and second level employees (O'Reilly III et al., 1988, Lambert et al., 1993, Eriksson, 1999).⁸² Moreover, tournament wage theory also predicts that incentives for management should have a positive effect on corporate performance (Lambert et al., 1993, O'Reilly III et al., 1988).

As my dissertation illustrates in 3.2, above, the Shanxi piaohao distributed expertise shares to head office managers, branch managers, accountants and amanuenses who had higher status in the piaohao. Therefore, in order to test whether the Shanxi piaohao had tournament wages in their incentive structure, this section examines the pay gaps between the piaohao employees' different levels and tests if the pay gaps correlate with the piaohao's performance.

The data employed in this section are still from the DDT. Based on the Shanxi piaohao's payment structure (Table 3-3), this thesis assumes that the employees who had a 1 fen expertise share were valued as the highest paid group (head office

⁸² A convex payment structure here means that the payment difference between the first and second level of employees is larger than the payment difference between the second and third level employees and so on.

managers and vice-head managers), employees who had 7-9 li expertise shares were treated as the second highest paid group (manager's secretary and managers of large branches), employees who had 5-6 li were treated as the third highest paid group (managers of middle-sized branches), employees who had 3-4 li were treated as the fourth highest paid group (managers of small branches), employees who had 1-2 li were treated as the fifth highest paid group (accountants and amanuenses), and employees who had only salaries were treated as the averagely paid group (common members of staff). To measure the DDT's performance, this dissertation employs the figures for the DDT paid-up capital in different fiscal years.⁸³ On the basis of this, my thesis defines the DDT payment gap as the differences between the following six levels of income:

GAP 1: income between the highest paid group and the average income of the second highest paid group;

GAP 2: income between the average income of the second highest paid group and the average income of the third highest paid group;

GAP 3: income between the average income of the third highest paid group and the average of the fourth highest paid group;

GAP 4: income between the average income of the fourth highest paid group and the average income of the fifth highest paid group;

GAP 5: income between the average income of the fifth highest paid group and the employees who had only average salaries of Tls. 100 per annum.

⁸³ “At the end of every fiscal year based on its profit, the piaohao shareholders could increase [beiben 倍本] or withdraw their capital. Normally, if the piaohao was profitable, the shareholders would invest more, but if the piaohao had a deficit and the shareholders believed it would not make a profit, they would withdraw their capital”, in Wei, *A history of the Shanxi Piaohao*, pp.55-6. As my thesis surveys DDT profits for only three fiscal years and paid up capital for seven fiscal years', it chooses the DDT paid up capital to measure its performance.

If the DDT's incentive structure satisfies a tournament model, then $GAP1 \geq GAP2 \geq GAP3 \geq GAP4 \geq GAP5$, and $GAP1$, $GAP2$, $GAP3$, $GAP4$ and $GAP5$ are positively correlated with any change in the paid-up capital.

As Table 3-9 shows, the pay gaps between the DDT employees at different levels, it can be found that its incentive structure satisfies the tournament model for only certain levels of employees: $GAP2 \geq GAP3 \geq GAP4 \geq GAP5$. But the incomes of the highest paid group (head office managers and vice-head managers) and the second highest paid group (manager's secretary and large branches' managers), were not tournament wages.⁸⁴

Table 3-10: Employees' pay gaps in the DDT (Tls)

	1884-9	1890-3	1894-7	1898-1901	1902-4	1905-8	1909-12	1913-6	1917-20	1921-5	1926-9	1930-3
GAP1	170	608	1,464	2,380	3,026	3,400	3,438	3,014	2,318	1,200	281	0
GAP2	213	760	1,830	2,975	3,783	4,250	4,298	3,768	2,898	1,500	352	0
GAP3	170	608	1,464	2,380	3,026	3,400	3,438	3,014	2,318	1,200	281	0
GAP4	170	608	1,464	2,380	3,026	3,400	3,438	3,014	2,318	1,200	281	0
GAP5	128	456	1,098	1,785	2,270	2,550	2,579	2,261	1,739	900	211	0

Source: Based on Huang (2002a, pp. 631-5.) and Wei (1944, pp.55-6).

As this section further calculates the correlation coefficients between these pay gaps and the DDT paid up capital, it obtains the value of 0.37, which is statistically significant at 99% confidence level.⁸⁵ A positive correlation indicates that the DDT's incentive structure during this period had a positive impact on its performance.

⁸⁴ Besides dividing DDT income level according to the above criteria, I have also tried to define the DDT pay gap according to other criteria. For example, the group GAP 1 contains the employees who had a 1fen expertise share and the average total income of the expertise shareholders who had 7 li-9 li shares; GAP 2 represents the average total income of expertise shareholders who had 7-9 li shares and the average total income of expertise shareholders who had 3-6 li shares; GAP3 is between the average total income of the expertise shareholders who had 3-6 li and average total income of the expertise shareholders who had 1-2 li, GAP 4 is between the average total income of the expertise shareholders who had 1-2 li and the average income of those who only had salary but not expertise share. The result is similar to that of Table 3-10.

⁸⁵ "DDT paid up capital in 1884-9 was Tls. 100,000, in 1890-3 was Tls. 130,000, in 1894-7 was Tls. 140,000, in 1898-1901 was Tls. 160,000, in 1902-4 was Tls. 180,000, in 1905-8 was Tls. 220,000, and in 1921-5 was Tls. 300,000", in Wei, A history of the Shanxi piaohao, pp.55-6.

3.4 Exploring the malfunction of the piaohao's governance structure in its later period

The management and incentive structure in the Shanxi piaohao at one stage successfully disciplined and incentivised distant employees. However, when these piaohao confronted competition from foreign banks and modern Chinese banks in the late 1900s and risked being eliminated in the 1910s, this governance structure became dysfunctional. In order to explore the fundamental reason for this change, the present dissertation modifies the efficient wage model designed by Greif (2006), who studied the collective punishment mechanism of the Maghribi traders. Before outlining the models for the Shanxi piaohao, the similarities and differences between the two merchant groups are briefly illustrated.

Regarding similarities, both the Shanxi merchants and the Maghribi traders believed that solving conflicts in the public courts is expensive and time consuming, so they wanted to use private decisions to resolve the conflicts occurring in agency relations. Second, in their long distance business, both the piaohao merchants and the Maghribi merchants employed non-family members from their own ethnic group and used guilds to share the consequences of employees' misbehaviour.

The most obvious difference between the Shanxi piaohao and Maghribi merchants is the structure of the agent relationship. Among the Maghribi traders the principal agent relationship is horizontal, which means that the Maghribi merchants employed other Maghribi merchants as agents, and at the same time they also worked for these other Maghribi traders as agents themselves (Greif, 2006). In contrast, in the Shanxi piaohao this relationship was vertical, which means that the piaohao employed head managers and other members of staff as agents, but the shareholders did not work for them.

Moreover, as the Maghribi merchants did not work from a complete contract in defining misbehaviour, they used cultural rules as references to differentiate cheating from honesty (Greif 2006). Unlike the Maghribi traders, the piaohao merchants

designed comprehensive regulatory codes which clearly defined what behaviours constituted cheating.⁸⁶ Bearing these similarities and differences in mind, this thesis proposes the following hypotheses to explain the functioning of the piaohao's governance structure.

Model: Consider a closed career environment with P shareholders and A employees, where $P < A$, shareholders can hire more than one employees but each employee can work in only one firm. The reservation utility for an unemployed employee is I_u , a shareholder who does not hire an employee receives earnings I_n , the payoff from employing an employee is I_o . Assume that I_h is the income which an employee i receives to keep him honest in each period, in this condition, his lifetime income is S_i . Normally there are ten grades in each share, and an employee can earn a maximum of one share. Therefore, I_h denotes the income in line with the share that an employee has, $I_h = \{I_0, I_1, I_2 \dots I_{10} | I_0 < I_1 < I_2 \dots < I_{10}\}$, where h is the grade of the share. If we assume that employee i can work for 50 years, his lifetime income will be $S_i = \sum_{t=1}^{j=10} I_{th}$, where t is the year of i work. I_c is a once-off lump sum payoff for cheating. If we assume $H_h \in [0,1]$ is the probability that an honest employee will be rehired, while $H_c \in [0,1]$ is the probability that a cheater will be rehired. S_i is monotonically increasing in H_c, I_u, I_c and monotonically decreasing in H_h (Greif 2006).⁸⁷

⁸⁶ The reasons why these two merchant groups had different management structures can be explained as follows: First, the Maghribi traders were active during the 11-12th century, when communication technology was poor, so they could not rely on a hierarchic structure as the Shanxi piaohao could, to pass on accurate information and could use only cultural rules to specify what behaviour could be defined as cheating. Second, the Shanxi piaohao was a formal type of financial institution, that is, a firm. In contrast, the Maghribi traders did not set up any formal institution when they did business; they simply hired agents to buy and sell goods abroad, and when a transaction had finished, they decided whether to continue transactions in the next period on the base of agents' past performance.

⁸⁷ This model is largely inspired by the efficient wage model designed by Greif (2006, p.37, pp.88-9.). By modifying Greif's model, I can propose Hypotheses 2, 3 and 4 and validate them with historical evidence.

Hypothesis 1: A collective punishment mechanism is a self-enforcing mechanism, and is effective in preventing cheating.⁸⁸

The Shanxi piaohao shareholders wanted to hire honest employees because they required a lower S_i . Since each Shanxi piaohao shareholder would find it optimal to employ honest employees, he would like to form a collective punishment mechanism and this mechanism would be self-enforcing.

Hypothesis 2: An employee will be honest unless he identifies a decline of his piaohao.

Assume that an employee i starts his first job as an apprentice in a piaohao, during his whole career he has two options: to be honest (A_h) or cheat (A_c). If he is honest and works hard, he will be promoted, earn expertise share dividends or switch to another piaohao to earn a higher income. In this condition, his lifetime earnings will be S_i . However, if he cheats, he will receive a lump sum I_c . Since the Shanxi piaohao imposed a collective punishment and the cost of entry to another ethnic trading community was high (Landa 1981, p.356), I_c would be this cheater's lifetime income.

A rational employee will thus be honest if $S_i \geq I_c$, otherwise he will cheat. As I illustrate in the piaohao's incentive structure, I_i not only depends on the performance of the employee, but also relies on the profitability of a piaohao in its fiscal year. Moreover, as I illustrated in the case studies, below, an employee's annual income varied from Tls. 40 to Tls. 4,000. Therefore, if he was honest and his piaohao was profitable, he could expect his annual income to increase steadily.

For a cheater, the maximum amount of the lump that sum he can obtain by malpractice is the shareholders' total branch deposit. As each piaohao branch avoided depositing too much silver and relied on various types of draft to balance its reserves, the silver reserve in each branch would have been Tls. 20,000-30,000. One silver tael usually weighs 37 gram, is 2.5 inches long and 1.5 inches high; hence, it would have

⁸⁸ This hypothesis is validated by Greif (2006 p.37.), who shows that the Maghribi merchants wanted to hire honest employees because they required a lower lifetime income. This argument can also be applied to the Shanxi piaohao.

been difficult for a cheater to embezzle more Tls. 20,000 by carrying them away. Bearing the above facts in mind, I assume that the maximum amount of silver that a cheater could embezzle would have been Tls. 20,000.

Under these assumptions, it can be found that when the employee i perceives that the piaohao's future is prosperous, he will assume that if he is honest and works hard, his income will increase steadily and his lump sum he gains from cheating will be smaller than his total income if he remains honest, that is $S_i \geq C_i$. Therefore, he will be honest. However, when he realizes that the future of the piaohao is doomed; his lump sum from cheating is greater than his future income for working honestly, that is $S_i < C_i$, so he will cheat.

Hypothesis 3: When the piaohao guilds prevailed, a collective punishment mechanism was effective in preventing cheating behaviours. When the guild system decayed, however, the collective punishment mechanism evaporated.

Adequate information is necessary to ensure that a collective punishment mechanism is effectively imposed. By establishing guild and holding monthly meetings, the piaohao merchants could share this information. However, when the piaohao merchant faced threats after 1911, many of them went bankrupt and the piaohao merchant guilds declined. When there was no way to share the information about employees, this multilateral punishment mechanism was no longer valid.

Hypothesis 4: When career prospects close and no external career opportunities are offered, piaohao employees will remain honest. However, when employees have more job opportunities, they cheat.

When there are no other career opportunities, I_u is low, holding other variables constant, shareholders need only provide a low S_i to keep employees honest. When there are other work opportunities with better treatment, S_i increases, due to a higher I_u . The cost of keeping an employee honest increases. Therefore, if the piaohao cannot provide higher income, employees will cheat.

Before modern Chinese banks were established, the piaohao employees had no alternative job opportunities, but with the establishment of official banks and private

banks which implemented a policy of hiring piaohao employees in preference to other candidates, the job opportunities for these employees suddenly proliferated.⁸⁹

Unlike the Shanxi piaohao, which provided high dividends but imposed strict rules on their employees, the welfare and pension schemes in modern Chinese banks are more humane (Cheng, 2003 p.178.).⁹⁰ Moreover, because the Shanxi piaohao suffered great losses after the 1911 Revolution and could not afford their former salaries, the salary packages in the modern banks began to look more attractive.

A report in the Central Bank Monthly Newspaper in July 1925 refers to the wave of departures from the piaohao:

“As the Shanxi piaohao are on the verge of collapse, many excellent piaohao managers who have identified this trend have left for new jobs in government banks. In 1908, Jia Fuchen and Huo Keqian, managers in the Tian Cheng Heng piaohao to Sichuan moved to the Provincial Bank. In 1910, Wang Jingfu, the RSC piaohao branch manager, and Fan Yuanmao, the WCH piaohao manager, left for the Guangxi Provincial Bank. These two official banks will operate well under the management of these Shanxi managers. In addition to these moves to official banks, Ding Weifan, the Yishanyuan piaohao manager and Chen Dai, the Fengyuanrun piaohao manager have left for new careers in the Siming Commercial Bank

⁸⁹ Sheng Xuanhuai, a politician as well as the founder of the Great Qing Bank, describes this in a letter: “When setting up the Great Qing Bank, I plan to hire foreigners in coastal branches and employ the Shanxi merchants in our inland branches. The reason for this arrangement is that inland branches mainly rely on the remittance business in which we are experts. Therefore, I ask your majesty to invite the leading piaohao merchant from Shanxi to Shanghai. Even if this person rejects our invitation, I have decided to employ mainly Shanxi merchants in our inland branches. Since you have many acquaintances in Shanxi, I sincerely request you to keep asking them”, in 盛宣怀未刊信稿 (*Unpublished letters of Sheng Xuanhuai*), 北京大学历史系近代史教研室 (History Department of Peking University) ed, 中华书局 (Zhonghua Book Company), 1960, p.73.). Here worth mentioning that there is a shift in modern banks recruitment strategy. When they just set up, they preferred to hire piaohao staff, but as they developed they found piaohao employees have difficulties in adapting to business models, therefore, they began to recruit graduates of prestigious overseas universities, in Cheng, *Banking in modern China*, p.171.

⁹⁰ This point will be further examined in 6.3.2, below.

[Siming Shangye Yinhang 四明商业银行] (Fan, 1936, cited in the Shanxi University of Finance and Economics, 2008, p.69.).”

The above analyses show that when the piaohao were profitable and no other career opportunity presented itself, the governance structure could manage employees. However, when these employees anticipated a possible decline and when they could find work in other financial institutions, this governance structure became weak.

3.5 Concluding remarks

From studying the piaohao's incentive structure, this chapter has demonstrated that expertise share was important in incentivising the piaohao employees. The pay ratio between employees who had the highest expertise shares those who had only the basic allowance is comparable to today's gap ratio between the pay of an investment bank's CEO and that of an ordinary employee. Although expertise share is important, normally in a piaohao about 20%-30% of the employees were entitled to this share for their long tenure and good performance. Regarding different employees' career choices, I have found that when the piaohao could pay high dividends it was optimal for its employees to stay in post. Otherwise, it was better for them to move to a modern bank. I have also found that, except for the pay gap between the employees with the highest and the second highest incomes, the pay gaps between employees at all other levels conform to a tournament model, which had a positive impact on the piaohao's performance.

After these explorations of the management and incentive structure of the piaohao, the next chapter takes the RSC piaohao as a case study to look into the business strategy and historical development of the piaohao as a whole.

Chapter 4. Business strategy: Factors that determined the RSC remittance fees

The Shanxi piaohao was established to deal with remittances, but for a long time studies on the modus operandi of its business were far from complete. This chapter, however, based on my data set, investigates the factors that determined the RSC's remittance fees by examining the types of client and draft dealt with in this piaohao, its business territory, the types of silver it accepted, and the length of time taken to cash a draft.

4.1 The reason for choosing the RSC and how far it was typical

This dissertation notes that one of the main concerns with a single case study is its representative and applicability to the whole population. Therefore, it is important to check whether the findings in a given case can be generalised to situations beyond itself (Hodkinson and Hodkinson, 2001 p.16.).⁹¹ With this in mind, this section checks how far the case of the RSC can reflect the situation for other piaohao. As the first and one of the largest Shanxi piaohao of its time, the RSC's running model and business strategies were copied by other Shanxi piaohao. As Table 4-1 shows, not only was the organizational structure in each analogous to the others in its group, but the groups also met to discuss business strategies via the guild and adopted very similar business practices as they developed.

⁹¹ As Hodkinson states (2001 pp.15-6.), no matter how rigorous we strive to be, case studies cannot cover all the facets of a population. Therefore, instead of thinking of 'generalisation', we can look to good case studies to tell us about situations beyond the actual case that was studied.

Table 4-1: Common features of the RSC and other Shanxi piaohao

Characteristic	Commonalities	Evidence
Organizational structure	Single proprietorship or partnership and a dual class equity structure.	山西票号史[An overview of the Shanxi piaohao] (Wei, 1944 pp.15-27.)
Branch distribution	Clustered in large cities at first and spread into county and town level cities.	山西票号若干分号统计 [Statistics on the Shanxi piaohao's branch distribution] (Huang, 2002a pp.212-215)
Types of draft	Direct original, direct loan, inverse original, inverse loan.	记山西票号[A survey of the Shanxi piaohao] (Junshi, 1917 cited in Huang 2002a, p.677.)
Business structure	Dominated by the remittance business, operated loans and deposits as side business.	Annual balance sheets of the RSC (Collected from the University of Tokyo), Annual balance sheets of the QJS, WTH and WFH (Huang 2002a, p.218, p.1272.)
Government business	Shared government remittances.	Business letter of the WTH (Huang, 2002a, p.1173.); Memorandum of Sichuan Provincial Governor Ding Baozhen (Huang 2002a, pp.181-2.)
Decline period	Centred on the 1910s.	山西票号史[An overview of the Shanxi piaohao] (Wei, 1944 pp.15-27.)

Besides this, another important reason to choose the RSC is the availability of its data on accounts. Unlike its peers, whose documents were lost or destroyed, the RSC had business records which were relatively adequately preserved, from its early establishment in the 1840s to its bankruptcy in the 1910s. This time span covers most of the Shanxi piaohao's operation period, and allows my thesis to embark on a full-scale detailed analyse of the piaohao business, which had been long condemned to over-simplified general description.

Although these Shanxi piaohao were similar in some ways, each piaohao would have its own idiosyncrasies, i.e. in business volumes and profits. However, since the research topic of this chapter is to investigate the Shanxi piaohao's business strategy, a case study of the RSC is arguably the best approach to take to this issue.

4.2 Types of client and draft in the RSC

Yang (1930 pp.89-90.) recorded that the Shanxi piaohao charged remittance fees according to the amount of silver being remitted and the clients who remitted drafts. Therefore, this section examines the values of the RSC drafts in every decade from the 1840s to the 1900s. On the basis of this, it further investigates the RSC clients and types of draft.

Table 4-2 summarises the descriptive results of the RSC drafts from the 1840s to the 1900s: on average, the RSC remitted Tls. 1,600 to Tls. 3,500 per draft, and its means declined gradually from Tls. 3,173 in the 1840s to Tls. 1,702 in the 1900s. In the 1840s a draft was worth at least Tls. 100 but in 1902-1909, the minimum value for a draft dropped to Tls. 1. Unlike the means and minimums which decreased over time, there is no clear pattern for the maximum values of the RSC drafts, which varied from Tls. 8,000 to Tls. 181,814.

Table 4-2: Descriptive results of the RSC drafts from the 1840s to the 1900s (Tls)

Period	Observations	Mean	S.d.	Min	Max
1840s	69	3,173	4,365	101	24,500
1850s	35	3,471	3,795	100	18,240
1860s	36	2,819	2,016	45	10,000
1870s	81	1,613	1,239	25	8,000
1880s	97	1,667	3,743	10	36,001
1890-3	1,765	2,492	6,590	1	181,814
1894/5	761	2,194	4,276	8	50,000
1896-9	113	3,270	7,029	20	50,400
1900/1	122	3,372	8,116	10	49,471
1902-9	1309	1,702	2,416	1	25,395

Sources: Based on the RSC business correspondence from the 1840s to the early 1900s; See Huang (2002a pp.833-1077.); the RSC 1906 annual balance sheets of Zhoujiakou and Xian branches (Collected from the Advanced Asia Studies Library, University of Tokyo)

Note: The reason why my thesis divides the 1890s into 1890-1893, 1894-1895, and 1896-1899 is that the First Sino-Japanese War broke out in 1894-1895. Similarly, in the 1900s, the Boxer Rebellion splits the first decade at some point between 1901 and 1902, because it took

place in 1900-1901. By treating these two events as thresholds, my thesis can pinpoint their impact on the RSC.

On the basis of Table 4-2, Table 4-3 shows the types of client that employed the RSC over time. It can be found that overall the RSC had seven types of client: 'firms', 'gentry', 'commoners', 'other piaohao', 'official', 'government departments' and 'foreign banks'. In the 1850s, only 'firm' and 'gentry' employed the RSC drafts, in the proportion of 96% and 4% respectively. 'Commoners' and 'other Shanxi piaohao' are types which emerged in the 1860s in the proportion of 1% and 21% respectively, and 'firms' still had the largest share (78%). The class of 'official' appeared in the 1870s business with a share of 2% and the remaining clients: 'firm', 'gentry', 'commoner', and 'other piaohao' occupied 83%, 3%, 4% and 8% of the total of drafts respectively.

Table 4-3: Descriptive results of the RSC drafts on different types of client in the from the 1850s to the 1900s (TIs)⁹²

	Obs	Mean	S.d.	Min	Max	% in total drafts		Obs	Mean	S.d.	Min	Max	% in total drafts
Firm							Gentry						
1850s	30	3,657	3,905	100	18,240	96%	1850s	5	877	1,194	155	3,000	4%
1860s	28	3,105	2,310	700	10,000	78%	1860s	0	-	-	-	-	-
1870s	62	431	469	25	1,200	83%	1870s	3	1,463	143	324	2,500	3%
1880s	27	4,442	5,552	11	36,001	72%	1880s	4	873	1,213	10	3,400	2%
1891-3	1,006	2,998	4,315	6	45,200	73%	1891-3	75	931	1,568	10	10,000	2%
1894/5	468	2,835	4,036	11	50,000	77%	1894/5	25	782	1,180	20	5,000	1%
1896-9	42	6,797	9,921	50	50,400	63%	1896-9	5	7,053	8,257	78	20,110	13%
1900/1	42	5,859	7,996	20	43,200	53%	1900/1	3	65	99	20	180	0%
1902-9	879	2,046	2,364	1	25,395	82%	1902-9	40	1,089	1,298	6	5,038	2%
Commoner							Piaohao						
1850s	0	-	-	-	-	-	1850s	0	-	-	-	-	-
1860s	3	311	55	45	500	1%	1860s	4	6,250	2,500	5,000	10,000	21%
1870s	11	431	469	25	1,200	4%	1870s	2	5,000	4,243	2,000	8,000	8%
1880s	57	418	754	12	4,000	13%	1880s	1	1,090	-	1,090	1,090	1%
1891-3	523	628	1,715	1	25,000	8%	1891-3	54	3,756	2,460	200	10,000	5%
1894/5	214	540	1,176	8	10,000	7%	1894/5	7	3,789	5,244	462	15,000	2%
1896-9	56	727	1,411	20	10,000	10%	1896-9	0	-	-	-	-	-
1900/1	61	612	1,478	10	10,070	9%	1900/1	0	-	-	-	-	-
1902-9	323	524	1,168	1	12,987	8%	1902-9	11	4,668	5,703	202	20,176	2%
Official							Government						
1850s	0	-	-	-	-	-	1850s	0	-	-	-	-	-
1860s	2	265	346	20	510	0%	1860s	0	-	-	-	-	-
1870s	3	785	328	416	1,040	2%	1870s	0	-	-	-	-	-
1880s	7	305	280	40	1,220	1%	1880s	1	20,000	-	20,000	20,000	11%
1891-3	79	1,299	2,488	11	13,270	3%	1891-3	26	22,494	42,862	94	181,814	9%
1894/5	33	499	677	11	4,000	1%	1894/5	11	11,009	12,982	1,000	49,050	8%
1896-9	6	519	191	128	704	1%	1896-9	4	7,014	4,128	-	20,110	13%
1900/1	9	6,777	2,344	50	11,677	6%	1900/1	6	29,743	10,644	750	49,471	24%
1902-9	22	961	1,284	3	4,802	1%	1902-9	34	2,509	3,662	4	19,140	6%
Foreign bank													
1850s	0	-	-	-	-	-							
1860s	0	-	-	-	-	-							
1870s	0	-	-	-	-	-							
1880s	0	-	-	-	-	-							
1891-3	2	7,500	3,536	0	20,000	1%							
1894/5	3	28,688	10,204	7,170	42,990	4%							
1896-9	0	-	-	-	-	-							
1900/1	1	28,800	0	28,800	28,800	7%							
1902-9	0	-	-	-	-	-							

Sources: Ibid.

Notes: When classifying the types of client, this thesis treats names ending with ‘号[hao]’, ‘庄[zhuang]’, and ‘行[hang]’ as ‘firms’, and treats names ending with ‘先生[Xiansheng, meanings Mr]’ as ‘individual members of the gentry class’. It regards names ending with ‘老爷 [laoye, meaning lord]’ or ‘大人 [daren, meaning Monsignor]’ as borne by officials, and when a name indicates no title, its owner is defined as a ‘commoner’. As the government department, Shanxi piaohao and foreign banks’ names are easy to identify, they are classified as such. ‘-’ means data are not available.

⁹² Unlike Table 4-2, Table 4-3 not describe client types in the 1840s. The reason that is in the 1840s the RSC did not record clients’ names and types in their letters.

As the time went to the 1880s, it was still ‘firms’ that occupied the largest share of the draft (72%). Although my thesis divides the 1890s into three periods – pre-war, wartime and post-war, it can be found that the ‘firms’ had the largest share, followed by ‘government’, ‘commoners’ and other types of client. During this period, foreign banks emerged with a share of 1% and gradually rose to 4%. In 1900/1, the share of the ‘firm’ for the first time dropped to 53%, while the share of ‘government’ increased to 24%. However, in 1902-9 the share of the firm recovered, to 82%, and the share of the government dropped to 6%.

Besides examining proportions, from Table 4-3 it can also found most of the smallest transactions concerned the ‘commoners’ and most of the largest transactions were found to involve the ‘firms’. Besides, compared with other types of client, the ‘government’ and ‘other Shanxi piaohao’ had larger means overall. As the Shanxi piaohao assisted with each other, from the RSC’s business correspondence, I have found if one piaohao was short of silver in a branch A, it could solve this problem by using the remittances of another Shanxi piaohao to remit silver from branch B to A.

As my thesis has illustrated in Chapter 1, the Shanxi piaohao designed four types of draft: direct original, direct loan, inverse original and inverse loan. On the basis of this division, Table 4-4 displays these drafts on their types in the RSC.

Table 4-4: Descriptive results of the RSC different types of drafts from the 1840s to the 1900s (TIs)

	Obs	Mean	S.d.	Min	Max	% in total drafts		Obs	Mean	S.d.	Min	Max	% in total drafts
Direct original							Direct loan						
1840s	14	2,104	2,155	101	8,000	40%	1840s	11	3,945	4,137	300	15,000	60%
1850s	23	2,531	3,875	100	18,240	75%	1850s	2	2,500	707	2,000	3,000	6%
1860s	13	3,654	2,478	500	10,000	51%	1860s	4	5,500	3,317	2,000	10,000	24%
1870s	43	997	914	25	5,000	45%	1870s	16	1,763	1,087	700	5,000	30%
1880s	49	2,019	5,855	11	36,001	71%	1880s	3	950	427	500	1,350	2%
1891-3	637	2,026	8,190	5	181,814	52%	1891-3	180	2,944	3,613	50	25,000	21%
1894/5	268	1,637	3,774	10	42,990	50%	1894/5	93	2,099	1,818	40	10,000	22%
1896-9	57	2,292	4,386	20	20,110	58%	1896-9	1	5,000	.	5,000	5,000	2%
1900/1	67	1,923	4,463	10	23,500	57%	1900/1	5	1,380	850	400	2,000	3%
Inverse original							Inverse loan						
1840s	0	-	-	-	-	-	1840s	0	-	-	-	-	-
1850s	0	-	-	-	-	-	1850s	4	3,503	2,006	2500	6,511	18%
1860s	3	4,667	4,619	2,000	10,000	15%	1860s	2	5,000	-	5,000	5,000	11%
1870s	0	-	-	-	-	-	1870s	9	2,614	2,392	526	8,000	25%
1880s	0	-	-	-	-	-	1880s	8	4,758	4,582	60	10,000	27%
1891-3	28	5,170	5,888	50	21,600	6%	1891-3	208	2,570	3,205	60	30,000	21%
1894/5	10	2,490	2,908	500	10,000	3%	1894/5	80	2,679	3,353	100	22,000	26%
1896-9	0	-	-	-	-	-	1896-9	11	8,286	15,207	150	50,400	40%
1900/1	0	-	-	-	-	-	1900/1	12	7,683	11,587	1,000	43,200	40%

Sources: *ibid.*

Note: The reason why this table does not describe the types of draft in 1902-9 is that the data used for analysis in this period come from the balance sheets, which do not record the draft types. ‘-’ means data are not available.

The table shows in the 1840s, there were only two types of draft with direct original drafts occupying 40% of the total of drafts and direct loan drafts having a share of 60%. When the Taiping Rebellion (1852-4) broke out in the 1850s, the RSC tightened their direct loan drafts while the direct original drafts increased from 40% to 75%. It was during this period that inverse loan drafts first showed up, with a share of 18%.

As time went on, inverse original drafts emerged in the 1860s with a share of 15%. At this period, *original drafts*, made up of direct original drafts and inverse original drafts occupied 66% of the total drafts and *loan drafts* which covered direct loan drafts and inverse loan drafts composed 34% of the total.

In the 1870s, original and loan drafts each occupied 45% and 55% of the total drafts. Although these two types of draft shifted shares in the 1980s, in the 1890s, they were fixed in the proportion of 55% and 45% respectively and remained unchanged in the period of 1900/1.

In the comparisons made by Table 4-4 of mean, minimum and maximum values of these four types of draft, it finds that in general the mean values for the loan drafts were larger than those of the original drafts. Moreover, from the 1840s to the 1900s, it is found that both the smallest transactions and the largest transactions more frequently occurred in direct original drafts than in other type of drafts, a fact which may be explained by the high incidence of this type of draft.

As Table 4-5 plots proportions of different types of draft employed by various clients, it finds for the ‘official’, ‘government’, and ‘foreign banks’ that 90% of their drafts were direct original drafts. Although not all the time, more than 80% of the commoners’ drafts and 60% of the gentry’s drafts were also direct original drafts and the rest were made up of direct loan and inverse loan drafts.

Compared with other types of clients, the types of draft employed by the ‘firm’ and ‘other piaohao’ were more diversified than those of its other clients. Its original drafts for ‘firms’, gradually shrank from 80% to 30% between the 1850s and the 1900s. This

downward trend was replaced by ever-increasing loan drafts, which climbed from 20% to 70% during the same period.

The most feasible explanation for the RSC to have issued ever-increasing loan drafts to the ‘firms,’ its largest clients is perhaps that the ‘firms’, unlike other clients, required large amounts of working capital in their operation, which could not be self-funded. It was this requirement that led them to ask the RSC to cash drafts by allowing them to borrow and repay the amount later. Another plausible reason for this is that the RSC charged higher remittance fees for firms than for other clients, as discussed below (section 4.6).

Table 4-5: Proportions of each type of draft employed by different types of client from the 1850s to the 1900s

	Direct original	Direct loan	Inverse original	Inverse loan	Obs		Direct original	Direct loan	Inverse original	Inverse loan	Obs
Firm						Gentry					
1850s	78%	3%	0%	19%	24	1850s	32%	68%	0%	0%	5
1860s	47%	32%	21%	0%	17	1860s	-	-	-	-	0
1870s	47%	36%	0%	17%	53	1870s	62%	0%	0%	38%	2
1880s	62%	2%	0%	36%	23	1880s	100%	0%	0%	0%	2
1891-3	43%	24%	7%	26%	632	1891-3	87%	0%	0%	13%	40
1894/5	41%	28%	3%	29%	298	1894/5	64%	13%	0%	23%	15
1896-9	38%	3%	0%	59%	28	1896-9	100%	0%	0%	0%	4
1900/1	30%	5%	0%	65%	31	1900/1	100%	0%	0%	0%	2
Commoner						Other piaohao					
1850s	-	-	-	-	0	1850s	-	-	-	-	0
1860s	0%	100%	0%	0%	1	1860s	60%	0%	0%	40%	4
1870s	100%	0%	0%	0%	8	1870s	0%	0%	0%	100%	2
1880s	100%	0%	0%	1%	33	1880s	100%	0%	0%	0%	1
1891-3	52%	39%	0%	9%	287	1891-3	18%	3%	23%	56%	31
1894/5	84%	14%	0%	2%	101	1894/5	13%	0%	22%	66%	6
1896-9	100%	0%	0%	0%	28	1896-9	-	-	-	-	0
1900/1	91%	0%	0%	9%	38	1900/1	-	-	-	-	0
Official						Government					
1850s	-	-	-	-	0	1850s	-	-	-	-	0
1860s	-	-	-	-	0	1860s	-	-	-	-	0
1870s	100%	0%	0%	0%	3	1870s	-	-	-	-	0
1880s	100%	0%	0%	0%	2	1880s	100%	0%	0%	0%	1
1891-3	92%	0%	0%	8%	45	1891-3	89%	10%	0%	1%	16
1894/5	100%	0%	0%	0%	25	1894/5	100%	0%	0%	0%	5
1896-9	100%	0%	0%	0%	5	1896-9	100%	0%	0%	0%	4
1900/1	100%	0%	0%	0%	8	1900/1	100%	0%	0%	0%	5
Foreign bank											
1850s	-	-	-	-	0						
1860s	-	-	-	-	0						
1870s	-	-	-	-	0						
1880s	-	-	-	-	0						
1891-3	100%	0%	0%	0%	2						
1894/5	100%	0%	0%	0%	1						
1896-9	-	-	-	-	0						
1900/1	-	-	-	-	0						

Sources: ibid

4.3 Strategy of branch distributions

When charging the remittance fees, the piaohao, besides the amount of silver being remitted Chen (1937 p.141) documented the fees charged according to the distance between branches and their location, etc. For Chen (1937 p.141.) the remittance fees in rural cities were normally several times higher than in large cities. Because no study has so far analysed the dynamic change in the piaohao's branches, it will be the focus of this section.

Table 4-6 illustrates the percentages (according to volume of business) of the places from which the RSC sent drafts, from the 1840s to the 1900s. It shows in the 1840s there were about fourteen cities that handled the RSC's drafts. Among these cities, the commercial centres Suzhou and Yangzhou took up 21% and 13% of the total drafts respectively, while the capital Beijing occupied 18%.⁹³ Besides these three cities which accounted for the three largest shares of the RSC drafts, Hankou, Hekou, Kaifeng, Lanzhou and Pingyao each occupied 6%-8% of the total drafts, and the remaining seven cities held 1%-3% of the RSC drafts.⁹⁴

⁹³ Beijing, Hankou, Suzhou, and Foshan were the four largest commercial centres in China before the First Opium War, and were collectively called the empire's Four Trading Centres [tianxia sijv 天下四聚] (Huang, 2002a p.28.).

⁹⁴ Among the cities which had less than 10% of the RSC drafts, Xian, Lanzhou, Chengdu, Kaifeng and Hankou were provincial capitals; Pingyao and Taigu accommodated Shanxi piaohao headquarters; and Hekou at the time was known as a tea trade junction.

Table 4-6: Percentages of all the places to which the RSC sent drafts from the 1840s to the 1900s

Places	1840s	1850s	1860-4	1865-9	1870s	1880s	1890-3	1894/5	1895-9	1900/1	1902-9
Beijing	18%	12%	4%	9%	10%	10%	10%	12%	10%	5%	5%
Changde	1%	-	-	2%	4%	-	-	-	-	-	-
Changsha	-	-	-	3%	-	8%	4%	6%	1%	3%	1%
Chengdu	4%	8%	-	-	11%	1%	6%	3%	2%	2%	2%
Chongqing	-	-	-	-	29%	1%	5%	3%	12%	13%	6%
Guangzhou	-	-	21%	1%	11%	1%	6%	8%	1%	8%	2%
Guilin	-	-	-	-	-	2%	3%	2%	3%	4%	5%
Hangzhou	-	-	-	1%	-	-	3%	3%	2%	3%	1%
Hankou	6%	17%	41%	9%	17%	2%	14%	13%	3%	11%	18%
Hongkong	-	-	-	-	-	-	1%	3%	-	-	-
Hekou	8%	16%	-	-	-	-	-	-	-	-	-
Jinyang	-	-	-	-	-	1%	1%	-	-	-	-
Kaifeng	8%	2%	15%	-	2%	7%	4%	6%	2%	1%	3%
Lanzhou	9%	5%	19%	-	-	-	-	-	-	-	-
Pingyao	7%	-	-	1%	1%	2%	2%	1%	-	1%	3%
Qingjiangpu	1%	-	-	-	-	-	1%	2%	1%	5%	-
Qixian	-	24%	-	-	-	-	-	-	-	-	-
Shanghai	-	-	-	3%	-	50%	11%	6%	32%	32%	23%
Shashi	-	-	-	-	3%	-	3%	9%	-	1%	-
Suzhou	21%	10%	-	68%	5%	5%	1%	1%	-	-	-
Taigu	1%	6%	-	-	-	-	1%	1%	-	-	-
Taiyuan	-	-	-	-	-	2%	2%	3%	1%	3%	-
Tianjin	1%	-	-	-	1%	1%	10%	8%	2%	2%	5%
Wuzhou	-	-	-	-	-	2%	1%	1%	22%	2%	16%
Xian	2%	-	-	-	-	-	1%	1%	-	1%	1%
Xiangtan	-	-	-	3%	-	1%	4%	4%	1%	1%	5%
Yangzhou	13%	-	-	-	3%	3%	4%	2%	2%	1%	2%
Yuzhou	-	-	-	-	2%	-	-	-	-	-	-
Zhoukou	-	-	-	-	1%	1%	2%	2%	3%	1%	2%
Total											
number of places	14	9	5	10	14	18	24	23	17	20	17

Sources: Based on the RSC business correspondence from the 1840s to the 1900s (Huang 2002a pp.833-1077.); RSC 1906 annual balance sheets of Zhoujiakou and Xian branches (Advanced Asia Studies Library, University of Tokyo)

Note: as this percentage is accurate down to a digit, cities which have less than one percent are omitted from the table. These cities include Baoding, Anqing, Nanchang, Huaian, Fuzhou, Wuxi, and Zhenjiang, etc.

Over time, with the approach of the 1850s when the Taiping Rebellion (1852-64) broke out, the number of the places that the RSC have drafts declined from 14 to nine. Among them the largest share of RSC drafts went to Qixian town, where the Shanxi piaohao headquarters of the Qixian faction were located. As a newly opened treaty port, Hankou began to occupy the second largest share of drafts and Hekou had the

third.⁹⁵ Provincial capitals Beijing, Chengdu, Kaifeng and Lanzhou altogether seized 27% of the drafts and the remaining cities, such as Suzhou and Taigu, shared the last 16% of the drafts.

Since the Taiping Rebellion lasted until 1864, my thesis further divides the 1860s into 1860-4 and 1865-9 two periods. It finds that when the rebellion troops were garrisoned in Suzhou and Yangzhou, these two cities disappeared from the RSC's map. As treaty ports Hankou and Guangzhou altogether occupied more than 60% of the drafts, which left the rest three cities had the rest. Soon after the Taiping Rebellion ceased, Suzhou once again became the city with the largest share of drafts in 1865-9, and Shanghai first emerged on the branch sites map with a share of 3%.

The RSC drafts in the 1870s were still centred in treaty ports and large cities. Of these drafts, 29% had been dealt in Chongqing, which was a rice and cotton trading centre and opened as a treaty port in 1875.⁹⁶ As an increasingly booming port, Shanghai overtook Suzhou and Hankou in the 1880s and became the city that handled the largest share of RSC drafts. As in the previous periods, Beijing still took up 10% of the total drafts, and Changsha, Kaifeng and Suzhou each occupied 5%-10% of the drafts. These five cities altogether held 80% of the drafts, leaving the other thirteen cities such as Hangzhou, Yangzhou and Guilin share 20%.

Before the First Sino-Japanese War (1894/5), the number of places that the RSC had drafts reached a zenith 24. Moreover, as these figures show, when the RSC sent its drafts to more places, their drafts were more equally divided. Of these drafts, 14% was in Hankou, 11% in Shanghai, 11% in Tianjin and 10% in Beijing. Besides these cities, trading centres such as Changsha, Chengdu, Chongqing, Guangzhou, Kaifeng, Xiangtan, and Yangzhou each seized 4%-6% of the total drafts, and other cities such as Guilin, Hangzhou, Wuzhou, Taiyuan, Shashi, Zhoujiakou and Xian occupied 1%-3% of the RSC drafts.

Although the First Sino-Japanese War occurred in 1894, it can be inferred from the places where the RSC had business that the structure of its business territory in this

⁹⁵ Hankou was opened as a treaty port in 1858 to United Kingdom and France under the Treaty of Tianjin.

⁹⁶ Chongqing was opened as a treaty port to Britain in 1875 under the Treaty of Yantai.

period changed little, apart from a slight decline in the number of places where it sent drafts. It was after the war that the RSC drafts centred on Shanghai⁹⁷, Wuzhou⁹⁸, Chongqing⁹⁹ and Beijing. These four cities altogether seized 80% of all RSC drafts and the remaining nineteen cities shared the 20% that was left.

During the Boxer Rebellion Shanghai still had the largest share of 33%, as it had in 1896-9, followed by Chongqing and Hankou. In addition to these three treaty ports, Guangzhou, Beijing and Qingjiangpu each accounts for 5%-8% of the drafts, while the other 20 cities, including Yangzhou, Xiangtan and Hangzhou, each had 1%-3% of the drafts. Here it is worth mentioning that, unlike the Taiping Rebellion which garrisoned southern China, the Boxers were mainly distributed in Beijing and Tianjin, and this may be the reason why the RSC's drafts in these two places declined by half while others kept relatively unchanged.

When the Boxer Rebellion came to an end, the RSC drafts once again centred on Shanghai, Hankou and Wuzhou, and the volume of drafts in Tianjin recovered to its pre-rebellion level. Beside the above cities, Chongqing, Guilin, Tianjin and Xiangtan each occupied 5% of the drafts and Changsha, Xian, Chengdu and other seven cities shared the remaining 20% of them.

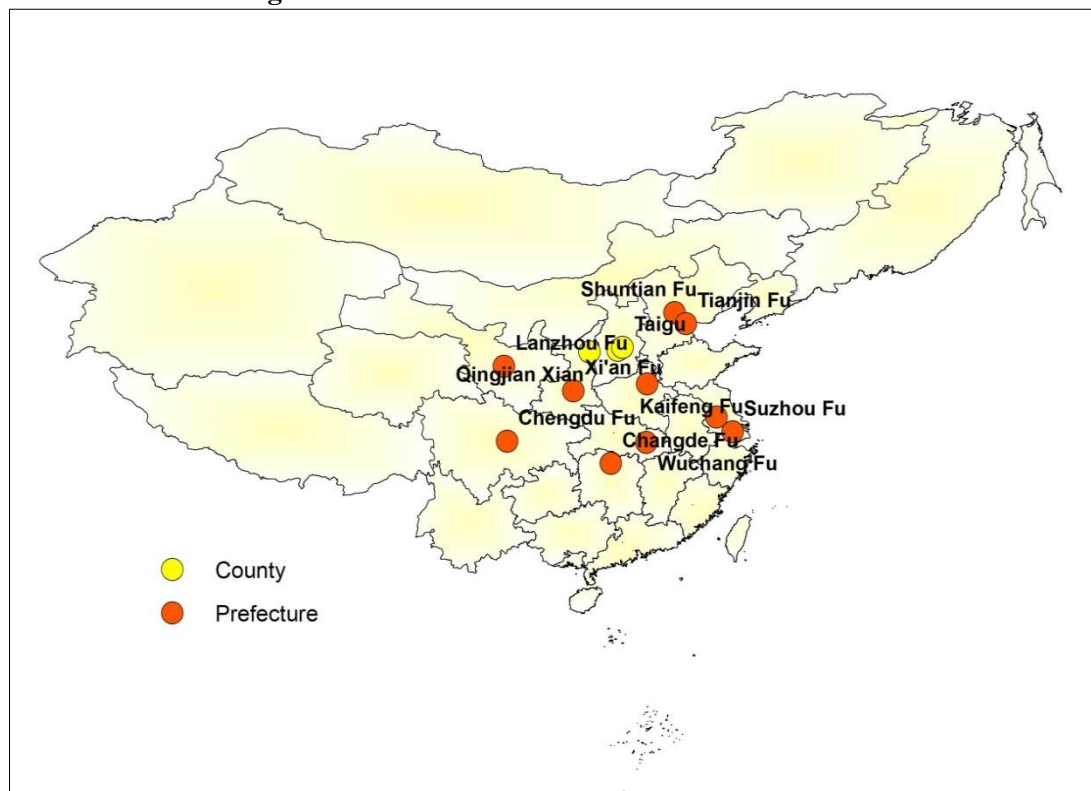
⁹⁷ Political and economic factors may explain why Shanghai was able to transcend other cities and absorb the largest share of drafts after the war. "After the First Sino-Japanese War, the Qing court borrowed 350 million tls of silver from Britain, Germany, Russia, and France to pay for the indemnity. In order to pay a value of Tls.12 million principal plus interest every year, the Qing court allocated the tax and the customs revenues of eighteen provinces to be submitted to the Shanghai Customs who then would pay the foreign banks. As my thesis will illustrate in the piaohao's government business (0), the share of the foreign loans remitted by the piaohao out of their total governmental remittances increased from zero to 22%. Such a big jump could to some degree explain the RSC's drafts in Shanghai soared. Apart from the political reason, economic factors played a significant role in determining Shanghai's position. By the 1890s Shanghai had already become China's financial and trading hub. As the largest treaty port, Shanghai's import and export volumes took up 44% of all Chinese trade at the time, and the financial institutions operating in Shanghai were more numerous than in other places in China," in Huang, *A history of the Shanxi Piaohao*, pp.343-5.

⁹⁸ Located in eastern part of Guangxi province, Wuzhou used to be the second largest Chinese inland harbour and a freight centre of the Yunnan, Guizhou, Sichuan, Hunan, and Guangdong provinces. It first appeared in the RSC's map in the 1880s with a share of 1% and kept this share throughout the war. According to the Qing court's treaties with Japan and Britain, Wuzhou was opened as a treaty port in 1897, and almost at the same time the RSC's drafts in Wuzhou soared to 23%.

⁹⁹ Similar with Wuzhou, soon after Chongqing opened as a treaty port to Japan in 1895 its drafts also increased by several times.

Figure 4-1, Figure 4-2, and Figure 4-3 plot the distribution of RSC branches in the 1840s, 1890-3, and 1902-9 and show that during their early stages the RSC's branches were mainly distributed in central China in cities at prefectural level. As time passed, in the 1890s, its business network spread to southern and eastern China, into economically advanced regions. Moreover, during this period, more county-level and town level branches also emerged. But as the RSC went into the last decade of its operation in the period 1902-9, it retreated from the southwest and focused its business on eastern China.

Figure 4-1: RSC branch distributions in the 1840s



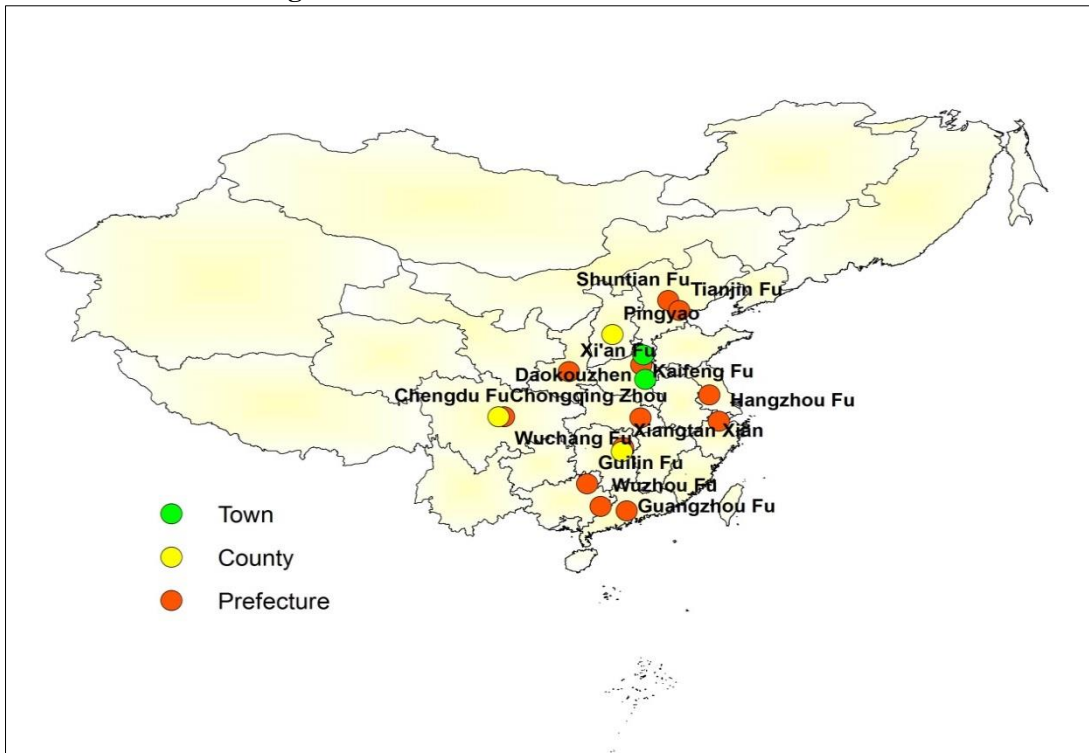
Sources: Based on the RSC 1840s letters from Beijing to Pingyao, and from Zhangjiakou to Kaifeng (Huang, 2002a pp.832-840).

Figure 4-2: RSC branch distribution in 1890-3



Sources: Based on the RSC 1890-3 business letters from Pingyao to Beijing, Tianjin, Shanghai, Hangzhou, Changsha, Xiangtan, Guilin, Shashi, Chongqing, Chengdu, Zhoujiakou, Kaifeng, Sanyuan, and Xian (Huang, 2002a pp.865-1065.).

Figure 4-3: RSC branch distribution in 1902-9



Sources: Based on the RSC 1906 annual balance sheets of Xian and Zhoujiakou branches (Advanced Asia Studies Library, University of Tokyo).

The above analyses suggest that during the operation of the RSC most of its drafts were sent to commercial centres and metropolitan cities. In its early development stages, over half the drafts were dealt in commercial centres, the capital Beijing, and the piaohao's headquarters. When Hankou, Shanghai, Chongqing and Wuzhou were opened in succession as treaty ports, the RSC began shifting its business focuses from its former commercial centres to these new ones. In addition, when setting up branches, the RSC also took account of the social stability of the location. When Suzhou and Yangzhou were occupied by the Taiping armies, the RSC shut down its branches in these cities. Again, when the Boxers occupied Beijing and Tianjin, it required other branches to cancel their drafts to these two places. These results altogether suggest that local business conditions determined the rule of thumb for sites selection by the RSC, and that a stable social environment was also important for their business.

4.4 Types of silver that the RSC accepted

Besides the location and the amount of silver being remitted, when setting its remittance fees, the piaohao also considered the types of silver it accepted and submitted (Chen 1937, p.114). Since the RSC's business correspondence normally recorded only the types of silver it accepted but did not submit, Table 4-7 shows these silver types over time and finds that the types of silver the RSC accepted grew as the places where it had draft facilities increased. Although the total number of types of silver varied from time to time, on average they were of high purity.

Table 4-7: Types of silver that the RSC accepted from the 1840s to the 1900s

Silver type	1840s	1850s	1860s	1870s	1880s	1890-3	1894/5	1895-9	1900/1	1902-9
Bai Bao Yin		-	-	-	-	-	-	-	-	-
Bao Yin		1%	-	-	-	7%	3%	-	2%	-
Cao Bao Yin		-	-	-	-	-	3%	-	-	-
Chuan Bai Ding Yin		-	-	-	-	-	-	-	1%	-
Fan Yin		-	-	-	-	3%	-	26%	7%	-
Gu Bao Yin		-	-	-	-	3%	-	-	-	-
Gui Yin		-	-	-	35%	9%	7%	34%	54%	6%
Hua Bao Yin		-	-	-	51%	2%	5%	2%	-	-
He Bao Yin		-	-	-	-	-	-	-	-	-
Lao yin	53%									
Jing Bao Yin		-	39%	28%	2%	3%	6%	2%	1%	-
Pi Piao Yuan Yin		36%	-	-	-	-	-	-	-	-
Shan Zu Yin		14%	-	-	-	-	-	-	-	-
Xia Lu Zu Yin		28%	-	-	-	-	-	-	-	-
Yong Xiang Yin		-	-	-	-	4%	-	-	-	-
Yuan Se Yin		-	1%	-	2%	4%	-	1%	15%	-
Wen Yin	7%	-	-	47%	1%	8%	11%	18%	18%	-
Wu Se Bao Yin		-	8%	1%	6%	3%	4%	3%	-	-
Zu Bao Yin	40%	21%	48%	-	1%	2%	-	1%	-	-
Zu Wen Yin		-	-	14%	-	6%	12%	4%	1%	-
Zu Yin		-	4%	10%	2%	46%	49%	9%	1%	94%
Total types of silver	3	5	5	5	8	14	9	10	10	2
Weighted average purity	100%	94%	99%	99%	95%	96%	99%	97%	96%	100%

Source: Compiled based on the RSC business correspondence from the 1840s to the 1900s (Huang, 2002a pp.833-1077.); RSC 1906 annual balance sheets of Zhoujiakou and Xian branches (Advanced Asia Studies Library, University of Tokyo).

Note: As my thesis illustrates in 1.4, the Qing authorities did not have a systematic silver mint bureau and they set the silver tael ‘Wen Yin’ to stand for 100% pure silver. According to the place of production and level of purity, silver tael had different names. For example, Bai Bao Yin [白宝银] and Hua Bao Yin [化宝银] were circulated in Tianjin with a purity of 100% and 99.2% of pure wen yin. Cao Bao Yin [漕宝银] and Gu Bao Yin [估宝银] were used in Shanghai, with a purity of 92.9% and 99.2% respectively. Chuan Bai Ding Yin [川白锭银] was used in Chengdu, and He Bao Yin [河宝银] was used in Hekou. Fan Yin [番银] referred to various foreign dollars, and Gui Yin [规银] denoted to Spanish dollars. Shanxi province mainly used Jing Bao Yin [镜宝银] and Shaanxi province used Shan Zu Yin [陕足银]. Xia Lv Zu yin [下炉足银] was used in Yingkou and Yong Xiang Yin [用项银] was used in Changsha. Other types of silver tael, such as Yuan Se Yin [原色银], Wu Se Bao Yin [无色宝银], Zu Yin [足银], Zu Wen Yin [足纹银] and Zu Bao Yin stood for 100% pure Wen Yin and were widely accepted.

4.5 Duration to cash drafts

The length of time between receiving and submitting silver was important for the Shanxi piaohao. This is because it made use of this time to minimize the cost of transporting and storing silver [kongqi 空期], a term referring to the interval between

silver acceptance and submission from one transaction, to meet the amount required for another transaction (Huang, 2002a p.693.). Therefore, when charging the remittance fees, the piaohao also took account of the time required to cash drafts.¹⁰⁰ With this argument in mind, this section examines the length of time needed for the RSC to cash a draft.

As Table 4-8 shows, over time the RSC needed less time for this purpose: the average amount in the 1840s, 63 days, declined to 27 days in the period 1900-1901. This decline suggests that the RSC had less time to mobilize silver and required a deeper capital base to meet its silver requirements. The shortest time for the RSC to cash a draft would have been zero day, which means that the RSC cashed the draft at once. In the 1860s, the 1870s and the period 1896-9, the longest time required for the RSC to cash a draft was around 200 days.

Table 4-8: Descriptive results of the drafts duration from the 1840s to the 1900s (day)

Period ^a	Obs	Mean	Min	Max
1840s	20	63	0	210
1850s	20	78	0	240
1860s	22	41	0	105
1870s	41	19	0	90
1880s	23	49	0	150
1891-3	681	36	0	220
1894/5	347	34	0	319
1896-9	20	13	0	90
1900/1	25	27	0	165

Sources: *ibid.*

^a The reason why there is no indication of the length of time required in 1902-9 is that the transactions in this period were compiled from the RSC annual balance sheet rather than business correspondence. Unlike its letters, the RSC balance sheets do not record the intervals between receiving and submitted silver for drafts.

¹⁰⁰ As the DDT former branch manager Qiao Dianjiao memorialised, the bank charged higher fees on remittances transferred by telegraph than on those transferred by drafts [票汇] or letters [信汇]. The reason for this is that using the telegraph shortened the interval between receiving and submitting silver, in which the piaohao could have uses the silver for other purposes, such as lending it on interest. Hence, the clients using the telegraph had to pay higher fees (Qiao 1961 cited in Huang 2002a, p.712). Qiao's arguments were also common to see in contemporary newspaper reports, for instance in the *Da Gong* and the *Shenbao* (Huang, 2002a, pp.712-4).

As regards the length of time with different types of client, Table 4-9 shows that over time it was the ‘firm’ that had the greater means and maximum values. This may have been because, compared with other types of client, ‘firms’ had a larger share of loan drafts, which required more time to be repaid. Clients who used original drafts, i.e. the ‘commoners’, ‘officials’ and ‘foreign banks’, could cash their drafts sooner than the firms could.

Table 4-9: Descriptive results of durations for different types of client from the 1850s to the 1900s (day)

	Obs	Mean	Min	Max		Obs	Mean	Min	Max
Firm					Gentry				
1850s	16	85	0	240	1850s	4	50	9	70
1860s	4	61	45	90	1860s	0	-	-	-
1870s	29	25	0	90	1870s	1	0	0	0
1880s	13	81	0	150	1880s	0	-	-	-
1891-3	437	51	0	220	1891-3	26	5	0	60
1894/5	252	43	0	319	1894/5	9	22	0	100
1896-9	9	28	0	90	1896-9	3	1	0	3
1900/1	11	47	0	165	1900/1	0	-	-	-
Commoner					Other piaohao				
1850s	0	-	-	-	1850s	0	-	-	-
1860s	1	0	0	0	1860s	17	39	0	105
1870s	7	0	0	0	1870s	2	30	15	45
1880s	9	7	0	60	1880s	0	-	-	-
1891-3	159	7	0	120	1891-3	23	41	0	164
1894/5	54	5	0	100	1894/5	5	29	0	66
1896-9	5	0	0	0	1896-9	0	0	0	0
1900/1	11	12	0	135	1900/1	3	9	0	22
Official					Government				
1850s	0	-	-	-	1850s	0	-	-	-
1860s	0	-	-	-	1860s	0	-	-	-
1870s	2	0	0	0	1870s	0	-	-	-
1880s	0	-	-	-	1880s	1	14	14	14
1891-3	28	12	0	120	1891-3	6	14	0	60
1894/5	22	4	0	30	1894/5	4	53	0	90
1896-9	3	0	0	0	1896-9	0	0	0	0
1900/1	0	-	-	-	1900/1	0	-	-	-
Foreign bank									
1850s	0	-	-	-					
1860s	0	-	-	-					
1870s	0	-	-	-					
1880s	0	-	-	-					
1891-3	2	10	10	10					
1894/5	1	10	10	10					
1896-9	0	0	0	0					
1900/1	0	-	-	-					

Sources: *ibid.*

Table 4-10 describes the time needed for cashing different types of draft and confirms the conjecture on intervals for ‘firms. From the 1840s to the 1900s the means of the *loan drafts*, including direct loan and inverse loan drafts, were greater than those of the *original drafts*. But in regard to the minimum and maximum values, the table shows that there were no obvious differences between the different types of draft.

Table 4-10: Descriptive results of durations for different types of draft 1840s-1900s (day)

	Obs	Mean	Min	Max		Obs	Mean	Min	Max
Direct original					Direct loan				
1840s	12	50	0	210	1840s	8	84	15	180
1850s	15	64	0	100	1850s	2	454	30	60
1860s	13	34	0	50	1860s	4	68	0	105
1870s	26	7	0	90	1870s	8	44	30	60
1880s	16	39	0	150	1880s	3	22	5	30
1891-3	376	10	0	120	1891-3	131	65	5	220
1894/5	186	11	0	319	1894/5	82	61	3	120
1896-9	16	4	0	36	1896-9	1	68	68	68
1900/1	17	2	0	22	1900/1	4	71	10	165
Inverse original					Inverse loan				
1840s	0	-	-	-	1840s	0	-	-	-
1850s	0	-	-	-	1850s	3	173	70	240
1860s	3	17	15	21	1860s	2	75	60	90
1870s	0	-	-	-	1870s	7	34	15	45
1880s	0	-	-	-	1880s	4	109	90	150
1891-3	18	18	0	63	1891-3	157	77	0	220
1894/5	6	8	0	25	1894/5	73	65	0	120
1896-9	0	-	-	-	1896-9	3	41	0	90
1900/1	0	-	-	-	1900/1	4	90	0	135

Sources: *ibid.*

4.6 Factors determining the remittance fees

Making use of descriptions by previous scholars, this section describes the factors that might determine the RSC remittance fees. According to my data set, this section

designs a multiple linear regression and postulates that the piaohao's remittance fees were charged on the basis of the following factors:¹⁰¹

1. The amount of silver that the piaohao remitted: the more silver that was remitted, the higher the fees.
2. The interval between receiving and submitting the silver: the longer it took the piaohao to submit the silver, the cheaper the fees.
3. The distance between the branches issuing and cashing the drafts: the greater the distance, the higher the fees.
4. The type of client: remittances fees for the 'firm' were different from those for the 'government', 'commoner', 'gentry', 'official', and 'other piaohao'.¹⁰²
5. Types of drafts: remittance fees for the 'direct original draft' are statistically different for the 'inverse original draft', 'direct loan draft', and 'inverse loan draft'.
6. Location of a branch: remittance fees for prefecture level cities are statistically different for the county or town level cities.
7. Methods of sending drafts: remittance fees for drafts sent by telegraph (tele) were statistically different for drafts sent by other methods.

On the basis of the above hypothesis, my thesis derives Equation 4-1:

$$y_i = x_0 + amox_1 + durx_2 + disx_3 + comx_4 + govx_6 + offx_7 + genx_8 + piaox_9 + dloanx_{10} + illoanx_{11} + iorx_{12} + towx_{13} + coux_{14} + telex_{15} \quad 4-1$$

where y_i is the remittance fees for a transaction i , '*amo*' denotes the amount of silver that is remitted, '*dur*' represents duration, '*dis*' refers distance between two branches, '*com*' denotes commoner, '*gov*' represents government, '*off*' refers official, '*gen*'

¹⁰¹ It has been noted that the piaohao took into consideration the types of silver they dealt in when charging remittance fees. But in its business letters, the RSC often recorded only type of silver it accepted but not the type submitted. Therefore, the following regression does not include types of silver.

¹⁰² When describing the values of RSC drafts for different types of client, it should be noted that 'foreign banks' constitute another type; however, the remittance fees charged to these foreign banks were incomplete in the RSC business letters and therefore are not analysed here.

indicates gentry, '*piao*' is the piaohao, '*iori*' is inverse original drafts, '*dloan*' denotes direct loan drafts, '*ior*' represents inverse original drafts, '*tow*' means town, '*cou*' represents county and '*tele*' indicates telegraph.

Facing this large number of predictors, before running the linear regression, I use a Best Subsets Regression to select variables which meet the criteria of the largest Adjusted R^2 and the smallest Mallows' Cp and show the result in Table 4-11.¹⁰³

¹⁰³ Best subsets regression is an automated procedure that identifies useful predictors during the exploratory stages of model building for linear regression. A small Mallows' Cp indicates that the model is relatively precise (has small variance) in estimating the true regression coefficients and predicting future responses.

Table 4-11: Best subset regression results

number of variables	Adj-R ²	Mallows' Cp	amount	duration	distance	commoner	government	official	piaohao	direct loan	inverse original	town	county	telegraph
1	21.4	89.2	X											
1	7.0	258.5		X										
2	22.1	15.7	X											X
2	21.7	88.7	X	X										
3	25.0	52.1	X	X										X
3	24.5	58.0	X								X			X
4	27.2	27.9	X	X					X					X
4	25.7	44.4	X	X	X									X
5	27.8	22.2	X	X	X				X					X
5	27.6	24.5	X	X					X	X				X
6	28.2	18.4	X	X	X				X	X				X
6	28.0	20.3	X	X	X	X			X					X
7	28.6	14.9	X	X	X	X			X	X				X
7	28.4	17.0	X	X	X				X	X		X	X	
8	28.8	13.1	X	X	X	X	X		X	X				X
8	28.8	13.6	X	X	X	X	X		X	X				X
9	28.9	12.1	X	X	X	X	X	X	X	X			X	X
9	28.9	12.3	X	X	X	X	X		X	X			X	X
10	29.1	11.7	X	X	X	X	X		X	X	X	X	X	X
10	29.0	11.7	X	X	X	X	X	X	X	X	X	X	X	X
11	29.2	11.2	X	X	X	X	X	X	X	X	X	X	X	X
11	29.1	11.6	X	X	X	X	X		X	X	X	X	X	X
12	29.2	11.1	X	X	X	X	X	X	X	X	X	X	X	X
12	29.1	11.8	X	X	X	X	X	X	X	X	X	X	X	X
13	29.1	12.0	X	X	X	X	X	X	X	X	X	X	X	X
13	29.1	13.1	X	X	X	X	X	X	X	X	X	X	X	X
14	29.0	15.0	X	X	X	X	X	X	X	X	X	X	X	X

Sources: Based on the RSC business correspondence from the 1840s to the early 1900s (Huang, 2002a pp.833-1077.); the RSC 1906 annual balance sheets of Zhoujiakou and Xian branches (Advanced Asia Studies Library, University of Tokyo).

Note: the dependent variable here is a remittance fee, and the independent variables ‘amount’ denotes the amount of silver that is remitted, the ‘duration’ represents the term between receiving and submitting silver, ‘distance’ refers to the distance between two branches, checking ‘commoner’ denotes that a client was a commoner, checking ‘government’ represents a client belonging to a government department, ‘official’ signifies that the client was an official, ‘gentry’ indicates that a client was a member of the gentry class, ‘piaohao’ means that the RSC client was another Shanxi piaohao, ‘direct loan’ denotes that a draft was a direct loan draft, ‘inverse loan’ means that a draft was an inverse original draft, ‘inverse original’ indicates that a draft was an inverse original draft, ‘town’ means that a draft was sent to a town, ‘county’ represents that a draft was sent to a county, and ‘telegraph’ means that a draft was sent by telegraph.

The above table shows that a regression with ‘amount’, ‘duration’, ‘distance’, ‘commoner’, ‘gentry’, ‘government’, ‘piaohao’, ‘direct loan’, ‘inverse loan’, ‘town’, ‘county’, and ‘telegraph’ as predictors has the best regression results with the highest Adj-R² and the smallest Mallows’ Cp. Combining this result and Equation 4-1, my thesis runs a multiple linear regression and shows the estimation results in Table 4-13.

Table 4-12: Descriptive results of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Remittance fee	818	39.68	102.30	-168	1237
Amount	818	2112.27	3408.63	5	37270
Duration	818	39.01	43.94	0	319
Distance	818	851.58	434.85	56	2158

Sources: Ibid.

Note: The dependent variable here is a remittance fee, and the independent variables ‘amount’ denotes the amount of silver that is remitted, the ‘duration’ represents the term between receiving and submitting silver, ‘distance’ refers to the distance between two branches.

Table 4-13: Multiple linear regression results

	Twelve variables			Eight variables			
	Coef.	Std. Err.	T	Coef.	Std. Err.	T	VIF
Amount	0.01*	0.001	13.9	0.01*	0.001	14.12	1.11
Duration	0.32*	0.088	3.62	0.36*	0.081	4.52	1.38
Distance	0.02*	0.007	2.62	0.02*	0.007	2.4	1.06
Commoner	14.90**	8.478	1.76	14.09***	8.262	1.7	1.22
Gentry	35.00*	15.486	2.26	33.87**	15.401	2.2	1.04
government	-35.3	25.502	-1.38				
Piaohao	-52.96*	17.8	-2.98	-50.96*	17.76	-2.87	1.03
Direct loan	9.56	9.048	1.06				
Inverse loan	25.41*	9.493	2.68	21.20**	8.515	2.49	1.27
Town	-21.46	14.363	-1.49				
County	-29.25	19.327	-1.51				
Telegraph	181.20*	31.086	5.83	178.70*	31.044	5.76	1.03
Constant	-26.16*	8.32	-3.14	-25.18*	7.823	-3.22	
Adjust R-square = 0.292				Adjust R-square = 0.288			
F (12,805)= 29.06				F (8,809)= 42.31			

Sources: Ibid.

Note: The dependent variable here is a remittance fee, and the independent variables ‘amount’ denotes the amount of silver that is remitted, the ‘duration’ represents the term between receiving and submitting silver, ‘distance’ refers to the distance between two branches, checking ‘commoner’ denotes that a client was a commoner, checking ‘government’ represents a client belonging to a government department, ‘official’ signifies that the client was an official, ‘gentry’ indicates that a client was a member of the gentry class, ‘piaohao’

means that the RSC client was another Shanxi piaohao, ‘direct loan’ denotes that a draft was a direct loan draft, ‘inverse loan’ means that a draft was an inverse original draft, ‘inverse original’ indicates that a draft was an inverse original draft, ‘town’ means that a draft was sent to a town, ‘county’ represents that a draft was sent to a county, and ‘telegraph’ means that a draft was sent by telegraph.

* $p < 0.01$

** $p < 0.05$

*** $p < 0.1$

Table 4-13 displays the regression results from the best subset and an adjusted estimation with eight variables. From the best subset estimation, it can be found that ‘amount’, ‘duration’, ‘distance’, ‘commoner’, ‘gentry’, ‘piaohao’, ‘inverse loan’, and ‘telegraph’ are statistically significant at a 99% confidence level; ‘commoner’ is statistically significant at a 95% confidence level. ‘Government’, ‘direct loan’, ‘town’ and ‘county’ are not statistically significant indicating that remittance fees for ‘government’ are not statistically different from those for the ‘firm’, those for ‘direct loan drafts’ are not statistically different from those for ‘direct original drafts’, and the fees for ‘town’ and ‘county’ are not statistically different from those for ‘prefecture’. Since these were four variables which are not significant, the best subset estimation is modified into an eight-variable regression.

The modified regression shows that all the variables are statistically significant and small VIF values indicate there is no multicollinearity among independent variables. Moreover, the residuals for ‘amount’, ‘distance’ and ‘duration’ also centre on zero and follow random patterns. These results suggest that this model is the best linear unbiased estimator (BLUE) of the regression and represents the best way to fit the data.

Based on the above regression results, Equation 4-1 can be written as Equation 4-2:

$$y_i = -25.18 + 0.01x_1 + 0.36x_2 + 0.02x_3 + 14.09x_4 + 33.87x_5 - 50.96x_6 + 21.20x_7 + 189.70x_8 \quad 4-2$$

The coefficient of the ‘amount’ is 0.01 means that, keeping the other variables constant, 1% increases in the amount of silver being remitted yields 0.01% increase in the remittance fees. ‘Duration’ equalling 0.36 means that a one-day extension of the

time until submission results in 0.36% rise in remittance fees. A ‘distance’ of 0.02 indicates that one kilometre further between the branch receiving the silver and the one where it was submitted resulted in a increase of 0.02% in the remittance fees.

From the coefficients for different types of client, it can be found that, for the same transaction, a commoner has to pay 14.09% more than a firm does, the gentry class has to pay 33.87% higher than a firm, while their peers, the other Shanxi piaohao, paid 50.96% less than the firms did. As for different types of draft, it can be found that for the same transaction, the remittance fees in an inverse loan draft amounted to 21.17% more than for a direct original draft. The coefficient for using the ‘telegraph’ was 179.07, revealing that, if other variables are kept constant, a draft sent by telegraph is 179.07% higher than it would have been if other methods had been used. The regression as a whole is statistically significant at a 99% confidence level, and about 29% of the variations in remittance fees can be explained by the above factors.¹⁰⁴

From the above regression results, it can also be found that the signs of ‘amount’, ‘distance’, and ‘telegraph’ are consistent with my hypothesis, while the results for ‘duration’ are not. This result suggests although the piaohao could use the length of time needed to process a transaction in silver, a longer time did yield higher remittance fees. On the basis of Equation 4-2, if a firm remitted a Tls. 100 direct original draft by letter from Beijing to Shanghai and cashed it after 30 days, the remittance fee that it had to pay was Tls. 10.86.

4.7 Concluding remarks

This chapter analyses the factors that determined the RSC drafts. In doing so, it examines the types of client and draft in the RSC, the distribution of its branches, the typed of silver types and the time needed to cash a draft. It finds that over time it was the ‘firm’ that constituted the RSC’s largest client group, and that about 40% of its drafts were loan drafts. Moreover, this chapter also reveals that, when establishing a new branch, the RSC took the consideration of local business conditions as its priority

¹⁰⁴ Other factors that affected remittance fees included local interest rate and types of silver that the piaohao dealt in (Huang, 2002a, p.711.).

and gradually expanded from cities at prefectural level to those in counties and towns. A growth of business sites also led to an increase in the types of silver that it accepted, which were all high in purity. In addition, as time went on, the interval before the RSC cashed a draft shortened from 63 days to 27 days. Finally, when testing the effect of these factors on determining the RSC remittance fees, I have found that, as the amount of silver being remitted increased, the length of time needed between the reception and the submission of silver became longer and as the average distance between two branches grew, the RSC would charge more in remittance fees. 'Commoners' and 'gentry', would pay more than 'firms', while 'other Shanxi piaohao' would pay lower remittance fees, and drafts sent by telegram would also be much more expensive than those sent by letter or with papers.

Chapter 5. Historical changes in the piaohao's business, incomes and profits

Using the RSC as a case study, the above chapter investigates the factors that determined the piaohao's remittance fees. As with the business strategy, comprehensive and in-depth studies on the piaohao's business, incomes and profits were impossible in previous studies, due to insufficient data. On the basis of the data set that I have compiled, this chapter examines the historical change in the piaohao's business incomes and profits.

5.1 Understanding the piaohao's government remittances

The Shanxi piaohao's relationships have long been a controversial issue in understanding their development.¹⁰⁵ By referring to official memorandums and compiling statistics on the piaohao's government business, this chapter studies how the Shanxi piaohao's government business developed and affected the piaohao's development.

Before it began remitting government funds through the piaohao, the Qing court had transported its revenues and disbursements in silver, using escorted convoys [zhuangshao yunxian 装鞘运现]. Every year, based on its budget and a final report of every province, the central government's Board of Revenue would apportion a quota of revenues as reserves [liucun 留存] for each province's own disposal, and would instruct the provinces with a revenue surplus to ship funds [xiexiang 协饷] to assist other provinces with a revenue deficiency. It would then ask the governors of the former provinces to ship the remainder, known as capital funds [jingxiang 京饷], to

¹⁰⁵ For example, Chen (1937 p.132) stated that the Shanxi piaohao dealt mainly with remittances for the Qing government, and with its deposits. Kong (1984) also claimed that the destiny of the piaohao and the Qing court were inextricably linked through the government remittances. With the end of the Qing regime in 1911, the piaohao lost this business umbrella and declined. Wang (2007) and Wang (2014b) respected the arguments of these leading piaohao scholars. In contrast to Kong (1984), however, Zhang (1989) and Shi (1994) have since argued that as time passed the Shanxi piaohao's government remittance business persisted in only a few provinces and the growth of the piaohao cannot be explained in terms of its relationship with the government.

Beijing (Song, 2014, p.5.). The shipping process was entrusted to local authorities, which were then obliged to find the men and horses to escort these funds to their destinations.

In some exceptional cases, however, such as dangerous roads or a shortage of manpower, local officials could remit government funds in so far as they were permitted by their superiors.¹⁰⁶ In 1862, with the Taiping rebels occupying southern and eastern China and looted silver having to be escorted by government forces, the central government for the first time officially agreed that provincial officials could remit government funds on a large scale.¹⁰⁷ During this period twelve out of eighteen provinces employed the piaohao for this purpose.¹⁰⁸

However, soon after the emperor at that time allowed local officials to remit the government funds, oppositions appeared from the central court. Referring to official memorandums, Table 5-1 delineates the disputes between the central government and local officials on piaohao's remittance for government funds and Figure 5-1 plots government remittance volumes for all the Shanxi piaohao's from 1862 to 1911.

¹⁰⁶ From the 'Archival Materials of the Shanxi Piaohao' (Huang, 2002a, pp.74-5), I have found the earliest record of a the Shanxi piaohao's government remittance dates back to 1849, when the Zhejiang Provincial Governor [xunfu 巡抚] Wu Wenrong wrote in his memorandum that his subordinate, a ninth rank official Zhang Bingzhong, remitted 'imperial household expenses [neiwufu jingfei 内务府经费]' for Tls. 4,460 from Hangzhou to Beijing without his permission. He mentioned that although Zhang had done this out of concern for the silver that he had no troops to escort, official Wu still asked the emperor Daoguang to punish official Zhang as an example to others. The above incident suggests that remitting government funds was not widespread in the 1840s and officials could do this only after obtaining permission from a high-level authority that was responsible to his superior. Moreover, from the business correspondence of the WTH piaohao Suzhou branch, I have also found this piaohao and the RSC competing to handle a government remittance in 1852, when silver escorting was dangerous (Huang, 2002a, p.1173.).

¹⁰⁷ According to Wang (1963 p.76.), the imperial court's annual tax revenue was about Tls. 8 million in the 1860s, but the tax revenue received by the central court in 1861 was only Tls. 1 million. Therefore, the Board of Revenue memorialised on 11th October 1862 that: "Capital funds should be remitted to Beijing either by escorting or remitting; the principal objective at present is that the government should have abundant silver to support our military actions." in Huang, *Archival materials of the Shanxi piaohao*, p.75.

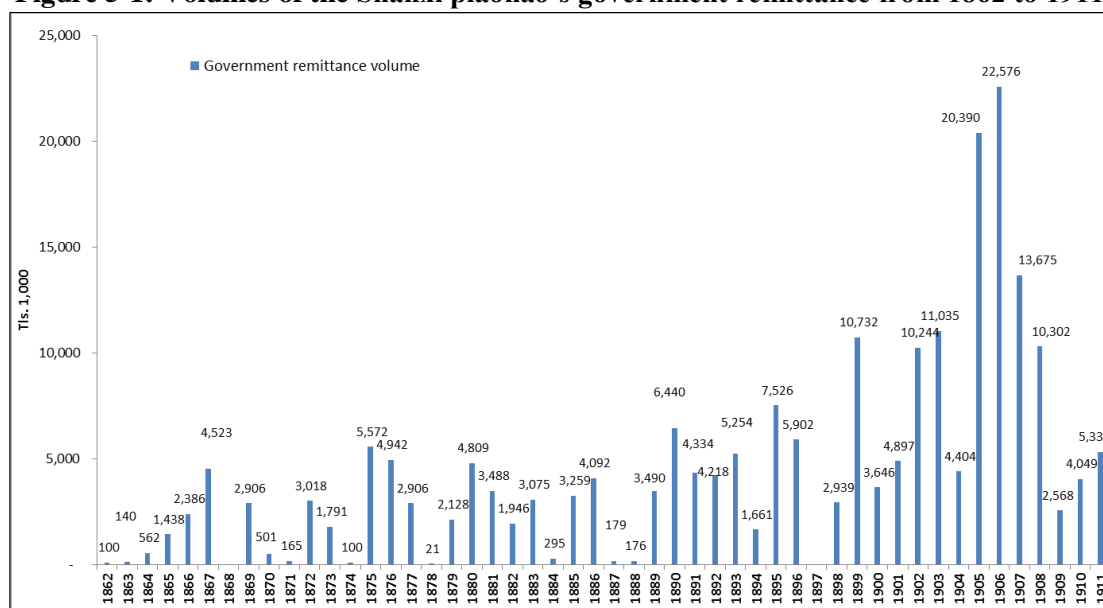
¹⁰⁸ By examining memorandums relating to the Shanxi piaohao's government remittances in the 1860s (Huang, 2002a pp.74-99.), I have found that these provinces were Fujian, Guangdong, Zhejiang, Jiangsu, Hubei, Hunan, Sichuan, Shandong, Shanxi, Shaanxi, Gansu, and Guizhou.

Table 5-1: Contests between the central court and local officials

Central Court	Argument	Local officials	Argument
1860s			
Investigating Censor Xie Yingxi	Remitting government funds will breed corruption and cause silver shortages in Beijing	Guangdong Maritime Custom Governor Yu Qing, Guangdong-Guangxi Viceroy Rui Lin, Fuzhou General Yu Lin, Chengdu General Chongbao, and Zhejiang Circuit Intendants Wenyu	Their administration areas could not escort silver due to danger on the roads or because they were short of silver and had to turn to the Shanxi piaohao for advances
1870s			
Investigating Censor He Bao, Supervising Censor of the Board of Punishment Ma Xiangru, Investigating Censor Liu Xijin, and Supervising Censor Cui Muzhi	Remitting government funds will breed corruption and cause silver shortages in Beijing	Sichuan Province Financial Commissioner Wen Ge, Guangdong-Guangxi Viceroy Liu Kunyi, and Zhejiang Governor Mei Qizhao	Beijing was close to the piaohao's headquarters in Shanxi province. If these piaohao encountered silver shortages in Beijing, they could always replenish it easily from Shanxi.
		Fujian-Zhejiang Viceroy He Jing	The type of silver circulating in Fujian was 'fanyin' silver but when submitting capital funds 'wenyin' silver was required. Therefore, it was only by remittances that 'wenyin' silver could be submitted in Beijing.
1880s			
Guangxu emperor	The overnight bankruptcy of a southern piaohao Fukang [阜康] prompted the emperor to promulgate a decree banning government remittances nationwide	Sichuan Provincial Governor Ding Baozhen	The Shanxi piaohao and the Southern piaohao were different. The former had had branches in Sichuan for many years and had never defaulted on their drafts.
		Fujian-Zhejiang Viceroy He Jing, Guangdong-Guangxi Viceroy Zhang Zhidong, and other regional governors	The Shanxi merchants were conscientious and generous in advancing government funds for remittances.
1890s			
Board of Revenue	Repaying the indemnity was the priority and local provincials had to ensure that each repayment was submitted to the Shanghai Maritime Customs on time.		

Sources: Memorandum of Board of Punishment official Ma Xiangru in 1876', 'Memorandum of Investigating Censor Liu Xijin in 1877', and 'Memorandum of Cui Mu Zhi in 1877', Memorandum of Sichuan Financial Commissioner Wen Ge on 28th March 1876', 'Memorandum of Fujian-Zhejiang Provincial Governor and the General He Jing in 1878 and 1879, Memorandum of Sichuan Provincial Governor Ding Baozhen on 24th January 1884, Memorandum of Fujian-Zhejiang Viceroy He Jing in 1884; Memorandum of Fuzhou General Mu Tushan in 1884; Memorandum of Jiangsu Provincial Governor Wei Rongguang' in 1884; and Memorandum of Guangdong-Guangxi Viceroy Zhang Zhidong in 1885, Memorandum of Jiangsu Provincial Governor Wei Rongguang in 1884, Memorandums collection under the reign of Daoguang, Xiangfeng, Tongzhi and Guangxu (Huang, 2002a, pp.167-234.)

Figure 5-1: Volumes of the Shanxi piaohao's government remittance from 1862 to 1911



Source: Statistics of the Shanxi piaohao's government business (Huang, 2002a pp.74-138.)

Note: By examining official memorandums, I have found that Huang's statistic has following errors: In 1879, his estimation omitted that the piaohao remitted Tls. 10,000 'Self-strengthening Movement' funds in Sichuan province (Huang, 2002a p.85.). Moreover, when calculating sums of governmental remittance volumes, he made sum errors in 1880, 1881, 1882, 1883, 1909, 1910, and 1911. All these mistakes have been amended in this dissertation. Since no statistics or memorandums remain from 1868 and 1897, the government remittance volumes in these two years are treated as zero.

As the above table and figure show, although the Shanxi piaohao's government remittance business faced fierce opposition from the central court, with the support of the local officials, piaohao's government remittance grew over time. Between the 1860s and 1890s, this business kept under Tls. 6 million. As the First Sino-Japanese War (1894-5) ended, the piaohao's government remittance increased steadily and reached a peak of Tls. 22 million in 1906. However, as an official bank, Great Qing Bank was established in 1907, piaohao's government remittance started to decline, and when the Qing court was overthrown in 1911, this business finally evaporated.

Table 5-2 shows types of government fund remitted by the piaohao. It can be found that there were seven types of government funds remitted by the Shanxi piaohao: capital funds [jingxiang 京饷], assistant funds [xiexiang 协饷], imperial household expense [neiwufu jingfei 内务府经费], self-strengthening movement funds [yangwuyundong jingfei 洋务运动经费], copper silver [tongbenyin 铜本银], foreign loans [waizhai 外债], and others, e.g. sales of official title donations [juanna 捐纳].

Table 5-2: Proportions of different types of governmental funds remitted by the Shanxi piaohao from 1862 to 1911

Year	Capital funds	Assistant funds	Self-strengthening movement funds	Foreign loans	Imperial household expenses	Copper Silver	Other funds
1862-4	100%	0%	0%	0%	0%	0%	0%
1865-9	94%	2%	0%	0%	5%	0%	0%
1870s	87%	6%	1%	1%	5%	0%	0%
1880s	62%	18%	16%	2%	2%	1%	1%
1890-3	61%	24%	11%	2%	3%	0%	0%
1894/5	57%	17%	17%	0%	4%	5%	1%
1896-9	51%	23%	2%	22%	2%	0%	0%
1900/1	35%	16%	0%	49%	1%	0%	0%
1902-11	12%	7%	1%	77%	1%	0%	2%
Average	62%	12%	5%	17%	2%	1%	0%

Source: *ibid.*

Note: The local taxation revenues shipped to Beijing were called ‘capital fund’, while those to the needy provinces were called ‘assistant fund’. After bitter experiences of military defeat at the hands of Western nations, the Qing court and launched the Self-strengthening Movement (1861-95) which consisted of the ‘Self-strengthening movement funds’. ‘Foreign loans’ here mainly denotes the loans borrowed from Britain, Germany, Russia, and France to repay the indemnities under the Treaty of Shimonoseki and the Treaty of 1901. ‘Imperial household expenses’ was for the emperor’s family use and ‘Copper silver [tongbenyin 铜本银]’ means the value of copper coins on a par with silver taels. ‘Other funds’ mainly included the sales of official title donations [juanna 捐纳].

As the table shows, over the 1860s, more than 90% of the government remittances remitted by the piaohao were capital funds, with imperial household expenses and assistant funds altogether had a share of 7%. One obvious change in types of government fund in the 1870s is the rise of assist funds and this upward trend

continued after the First Sino-Japanese War ended. This rise could be explained by the alteration in the imperial court's fiscal system.¹⁰⁹

After bitter experiences of military defeat at the hands of Western industrial nations, the Qing officials realized the importance of military industrialization and launched the Self-strengthening Movement (1861-95) in the country which required funds to be transferred from one place to another to meet financial requirements of the military and industrial investment. As a result of this, the share of the 'Self-strengthening movement' funds soared from 1% in the 1870s to 16% in the 1880s. However, the loss to Japan signifies the failure of the movement. As a consequence, self-strengthening movement funds remitted by the Shanxi piaohao plummeted drastically from 17% during the war to 2% after the war ended.

Contrast to a radical decline in the share of self-strengthening movement funds, the share of the foreign loans grew from 2% in 1880s to 22% in 1896-9 and reached a zenith of 77% in 1902-11. These two growing waves could be consequences of Tls. 230 million and Tls. 450 million indemnities under the Treaty of Shimonoseki and the Treaty of 1901.¹¹⁰ With a substantial increase in foreign loans, shares of capital funds and assistant funds slumped to 12% and 7% respectively in 1902-9. Dissimilar with

¹⁰⁹ Song (2014, pp.5-6.) described that before the Taiping Rebellion, the central court used assist funds to balance revenue surpluses and deficits among provinces. Every year based on the revenue and budget reports of each province, the Board of Revenue apportioned [拨] assist funds from surpluses to insufficient ones. However, due to local corps' outstanding performance during the Taiping Rebellion, regional authorities' military and fiscal autonomy was greatly increased after the Taiping Rebellion. Not only could they use the newly designed tax revenue *likin* [厘金] to support their military forces, maritime customs revenues were also at their disposal. When the central court officials found it hard to calculate the condition of local tax revenues after the rebellion, they started to estimate it. Based on their estimates, they changed the former policy of apportioning to amortization [摊]. Earlier silver recipient provinces, such as Sichuan and Fujian, became silver donators. Moreover, before the rebellion, funds to assist needy provinces were transported only once a year from the provinces with a surplus, but after the central court changed its policy, such funds could be transported central court at any time as long as a province needed silver. It was this situation that saw an increase in the funds that had to be remitted.

¹¹⁰ The Treaty of Shimonoseki was signed between the Qing court and Japan after the First Sino-Japanese War. The Treaty of 1901 was signed by the Qing court and eleven other countries (Britain, the United States, Germany, Japan, Russia, France, Italy, Austria-Hungary, Belgium, Spain and the Netherlands). Under its terms, the Qing government was required to pay Tls. 450 million to the above nations over the course of 39 years with an interest rate of 4% per annum. The indemnity was guaranteed by the Chinese Maritime Customs and was paid monthly to foreign banks in Shanghai.

the above four types of funds which experienced a lot of variations, ‘imperial household expenses’, ‘copper silvers’ and ‘other funds’ kept a share of less than 5% over time.

After this illustration of the variety of government funds remitted by the piaohao, Table 5-3 estimates the annual government remittance, advances to the government, and incomes earned from the government remittance business for all the Shanxi piaohao. This table also illustrates the share of the government remittance business in the piaohao’s total remittance volume, the percentage of advances to the government remittances in the piaohao’s total government remittances, and the share of income from these remittances in the piaohao’s total income.

Table 5-3: Annual government remittances, advances to the government and income from government remittances for all the Shanxi piaohao, 1860s-1910s

Period	Government remittance (Tls.)	Government remittance / total remittance ^a (%)	Advances to government remittances (Tls.)	Government remittance income (Tls.) ^b	Government remittance income/ total income (%) ^c
1862-4	267,184	2%	33,333	10,687	1.7%
1865-9	2,250,512	3%	49,640	90,020	4.7%
1870s	2,104,816	2%	174,076	45,254	0.9%
1880s	2,480,861	2%	502,959	7,443	0.1%
1890-3	5,061,411	3%	1,182,044	50,614	0.5%
1894/5	4,593,371	3%	460,260	45,934	0.5%
1896-9	6,669,838	3%	836,755	66,698	0.3%
1900/1	6,262,445	9%	348,201	53,220	3.1%
1902-11	12,135,798	5%	116,610	103,133	0.4%
Average	4,647,360	4%	411,542	52,556	1.4%

Source: Ibid.

^a The piaohao’s total remittance volume is illustrated in 5.2, below.

^b Since the commission fees that the Shanxi piaohao charged on government remittances depended on factors such as the duration and types of draft, my research thesis has found from official memorandums and piaohao business letters that in the 1860s the Shanxi piaohao on average charged Tls. 4 per Tls. 100 on government remittances. This value was Tls. 2 per Tls.100 in the 1870s, Tls.0.3 / Tls.100 in the 1880s and Tls. 0.1 / Tls. 100 in the 1890s and the 1900s.

^c The piaohao’s total remittance income is illustrated in 5.3,below.

Table 5-3 shows that soon after 1862, when the central government commissioned the piaohao to remit government funds on a large scale, the piaohao’s annual government remittances begin to increase and continued all through the 1860s. This volume

remained almost unchanged over the 1870s and the 1880s and grew rapidly in the 1890s and 1900s. On average, the Shanxi piaohao remitted Tls. 4.6 million in government funds per annum.

When the study examines the piaohao's advances for the government remittance, the above table shows that, unlike the government remittances, which kept relatively unchanged between the 1870s and 1880s, the advances to government remittance increased four times over from the same period, when the central court imposed a strict ban on government remittances. Again, as the central government lifted this ban after the 1890s, the piaohao's advances to government declined.

Based on the average commission fees that the Shanxi piaohao charged on government remittances, the fifth column of Table 5-3 shows the income that the Shanxi piaohao earned from dealing in government remittances. It finds that this value increased steadily from the 1860s but plummeted in the 1870s and reached its nadir in the 1880s. As their government remittance volume recovered after the 1890s, however, the income from this business rebounded.

As the last column shows in illustrating the percentage of government remittance income out of the Shanxi piaohao's total income, on average the government remittance income occupied only 1.4% of the piaohao's total income. However, it is worth mentioning that, although the explicit income that the Shanxi piaohao earned from government remittances was small, the large invisible income that this business brought to the Shanxi piaohao should not be overlooked. As my thesis has illustrated, the Shanxi piaohao used the empty time between accepting silver from one transaction and submitting it to meet the silver requirements of another transaction; moreover, the intervals in government remittances varied from 14 to 90 days (Table 3-8), the Shanxi piaohao earned appreciable amounts from such commissions.¹¹¹ This substantial invisible income explains why, despite the small explicit income from government remittances, the Shanxi piaohao still worked hard to keep this business.

¹¹¹ From its business letters, the present research has identified when Suzhou, the branch manager of the WTH piaohao, wrote his letter to Beijing in 1852, he mentioned that because the WTH had failed to remit government funds that time, the RSC earned a 50-day interval for a government remittance of Tls.70,000 (Huang 2002a, p.1175).

At present there are no complete data on the value of the Qing government's capital funds, assistant funds and funds of other types, but, according to Song (2014, p.30.), in 1893 the Qing court reported Tls. 18.5 million capital funds and Tls. 18.4 million assistant funds. According to my statistics, it can be seen that the capital funds and assistant funds remitted by the Shanxi piaohao occupied about 15% and 8% of the Qing court's total capital funds and assistant funds respectively in 1893.

From the above analyses it follows that the Shanxi piaohao's government remittance business developed as the result of confrontation between central and local officials. The types of government monies remitted by the Shanxi piaohao started as few but gradually multiplied. Although the Shanxi piaohao government remittances increased over time, their proportion in the piaohao's total business never rose above 10%. Moreover, although the income from the government remittances was small, this business gave the Shanxi piaohao intervals in which to use the silver for other transactions.

5.2 Estimates of the volume of annual remittances, deposits and loans

The Shanxi piaohao started with the remittance business and as they developed they began to undertake deposits and loans. However, how large these three types of business were in relation to the piaohao's total business and what roles they played in piaohao's total business has remained relatively unexplored owing to the lack of data. Now, however, on the basis of the RSC's correspondence and balance sheets, this section can estimate the historical changes in these three types of business and their proportion they took up of the piaohao's total business and show the results in Table 5-4.

Table 5-4: Annual average remittance, loan and deposit volumes for one branch, one piaohao and all the Shanxi piaohao (Tls. 1,000)

	1840s	1850s	1860-4	1865-9	1870s	1880s	1890-3	1894/5	1896-9	1900/1	1902/9
Average per branch											
Remittance	736	241	102	311	223	241	289	253	333	125	519
Deposit ^a	25	7	-	-	-	-	-	-	-	-	14
Loan ^b	12	4	-	-	-	-	-	-	-	-	74
Average per piaohao											
Remittance	8,826	4,092	1,118	5,286	3,448	4,344	7,511	6,322	8,329	2,627	9,346
Deposit	294	116	-	-	-	-	-	-	-	-	324
Loan	146	64	-	-	-	-	-	-	-	-	1,744
All the Shanxi piaohao ^c											
Remittance	110,327	69,571	17,888	84,575	89,654	104,254	187,765	158,049	208,213	68,303	252,342
Deposit	4,412	1,974	-	-	-	-	-	-	-	-	68,302
Loan	2,184	1,084	-	-	-	-	-	-	-	-	34,859
The number of branches	12	17	11	17	17	18	26	25	25	21	18
The number of Shanxi piaohao	15	17	16	16	26	24	25	25	25	26	27

Sources: RSC business correspondence from the 1840s to the 1900s (Huang, 2002a pp.833-1077.);Annual balance sheets of the RSC 1849 one unnamed branch, 1852 Qingjiangzhen,1853 Jiangxi branch, 1906 Xiangtan, 1906 Zhoujiakou, 1906 Kaifeng, and 1906 Changsha branch (Advanced Asia Studies Library, University of Tokyo).

Note: When estimating the average annual remittance volumes, my thesis uses the RSC business letters and balance sheets. In employing the business letters, it first calculates the remittance values contained in one letter, and, according to the number of letters sent by one branch in a year, it calculates the remittance volume for one branch. Combining the annual remittance volume of a branch and the number of branches in each period, it estimates the annual remittance volume for a piaohao. Then, according to a piaohao's annual remittance volume and the number of Shanxi piaohao, I estimate the annual remittance volume for all the Shanxi piaohao. To improve the accuracy of my estimation, this thesis also uses annual balance sheets of the RSC's different branches to estimate the remittance volume for one branch, one piaohao, and all the whole Shanxi piaohao. On the basis of the estimation results from the balance sheets and business letters, I calculate the average and use this value as the annual remittance volume in each period. The piaohao's business letters do not record its loan and deposit business. Therefore, when estimating the loan and deposit business, this thesis mainly uses the RSC balance sheets. '-' means data are not available.

^a From its balance sheets, this thesis has found that in the 1850s, the RSC depositors included gentry, commoners and officials. But in the 1900s three of their four depositors were firms, with one member of the gentry class. The average duration of a deposit in the 1850s was 19 months but had dropped by half in the 1900s. On average the RSC paid 3 li per month to their depositors, without regard to type of client.¹¹²

^b Regarding the borrowers, both in the 1850s and the 1900s, most of the piaohao's clients were firms, with one member of the gentry class, and one commoner in the 1900s. The

¹¹² When classifying the types of client, this thesis treats names ending with '号[hao]', '庄[zhuang]', and '行[hang]' as 'firms', and treats names ending with '先生[Xiansheng, meanings Mr]' as 'individual members of the gentry class'. It regards names ending with '老爷[laoye, meaning lord]' or '大人[daren, meaning Monsignor]' as borne by officials, and when a name indicates no title, its owner is defined as a 'commoner'. As the government department, Shanxi piaohao and foreign banks' names are easy to identify, they are classified as such.

average duration for these loans in the 1850s was 9 months, which had gone down to 5 months in the 1900s. In both periods, the RSC charged 8 li per month regardless of client type.

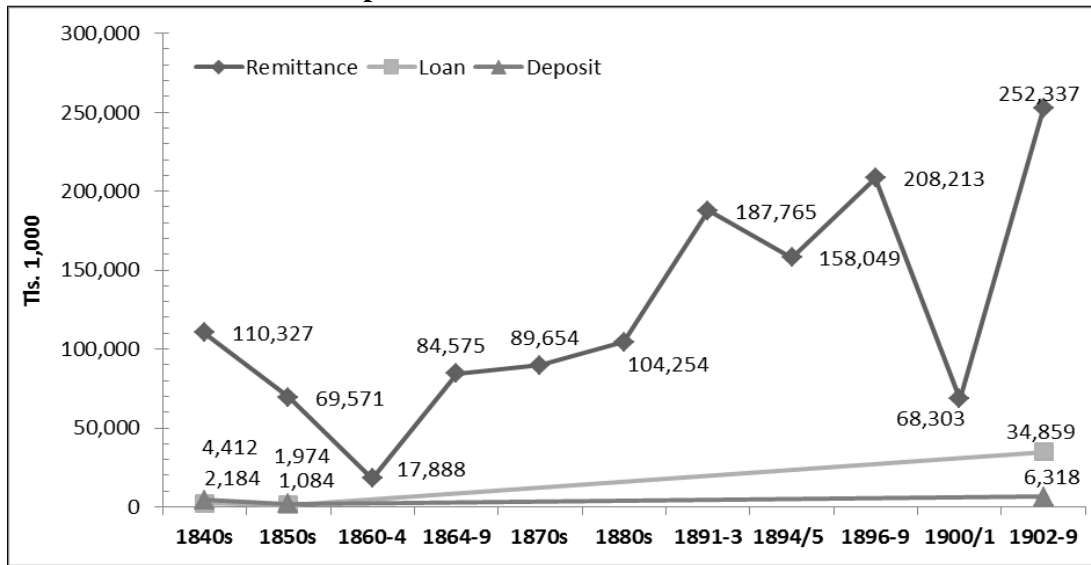
^c Business volumes for all the Shanxi piaohao are calculated by multiplying average business volumes per piaohao with number of Shanxi piaohao in operation in each period.

From Table 5-4 it can be found that the average annual remittance volume for one piaohao branch plummeted between the 1840s and 1850s when the Taiping Rebellion (1852-64) broke out. After this, business recovered, being only slightly affected by the First Sino-Japanese War (1894-5); the Boxer Rebellion (1900-1), however, had a heavy impact on it. Overall, between the 1840s and the 1910s, the annual remittance volume for one piaohao branch dropped from Tls. 736 thousand to Tls. 519 thousand. During the same period, the annual deposit volume dropped by half while the annual loan volume increased by six times.

Like the piaohao branch, one Shanxi piaohao experienced similar growth in these three types of business, except for the volume of annual remittances. Due to an increase in piaohao branches, the annual remittance volume for one Shanxi piaohao grew slightly, from Tls. 8.8 million to Tls. 9.3 million between the 1840s and 1910s.

As with the piaohao branch and the RSC, all the Shanxi piaohao lived through three troughs in their annual remittance, deposit and loan values during the Taiping Rebellion (1852/64), the First Sino-Japanese War (1894-5), and the Boxer Rebellion (1900-1). But because more Shanxi piaohao were set up, from the 1840s to the 1900s these three types of business expanded. However, unlike the remittance and loan which experienced substantial increases, the growth in deposits was small.

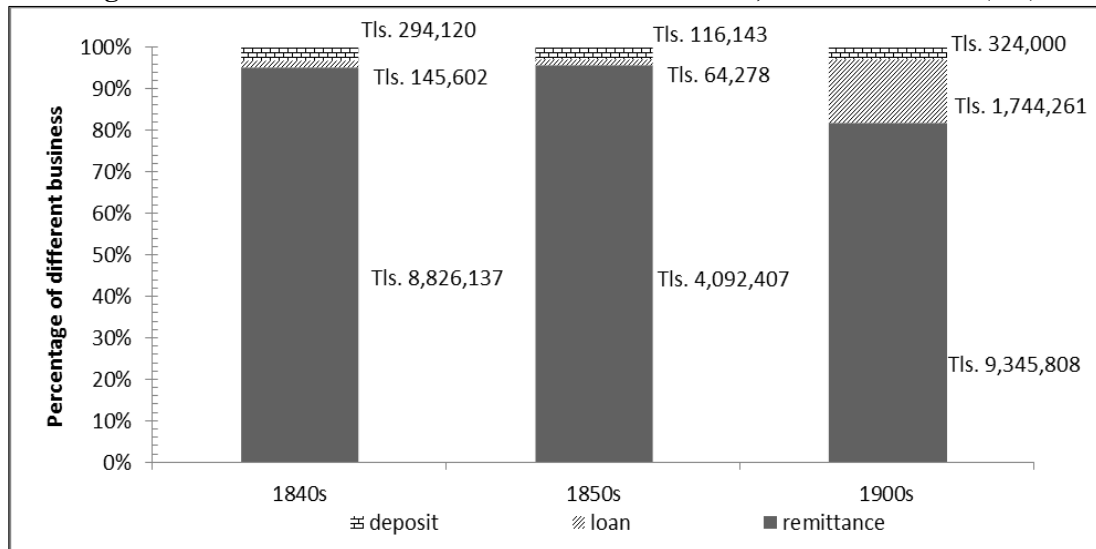
Figure 5-2: Volume changes of all the Shanxi piaohao's annual remittance, loan, and deposit from the 1840s to the 1900s



Sources: Ibid.

Based on Table 5-4, Figure 5-3 illustrates the RSC business structure in the 1840s, 1850s and 1900s in sequence.

Figure 5-3: Business structure of the RSC in the 1840s, 1850s and 1900s (Tls)



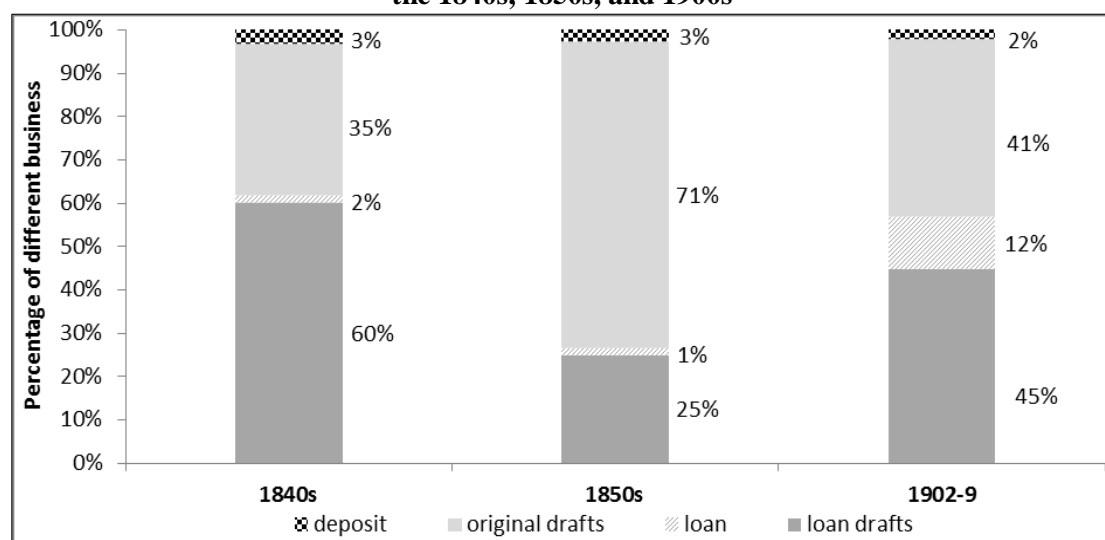
Sources: ibid.

Note: The size of each stacked column is the proportion of different businesses, and the figure next to the column is the value of the business.

As the figure suggests, the remittances were consistently the backbone for the piaohao. As time went on from the 1840s to the 1900s, the loan business increased its share,

while deposits were relatively constant over time. Recall the illustration, above, of the types of draft handled by the RSC in Table 4-4: with the remittances the loan drafts occupied 60%, 25% and 45% respectively of the total drafts in the 1840s, 1850s, and 1902-9 and original drafts occupied the rest. Therefore, if we divide the remittance into loan and original drafts and plot the proportions of deposit, original drafts, loans and loan drafts of the RSC shown in Figure 5-4, it can be found that the loans and loan drafts altogether took up 62%, 26% and 57% of the piaohao's total business in the 1840s, 1850s, and 1902-9 respectively and the original drafts and deposit occupied the rest in these periods.

Figure 5-4: Proportions of deposit, original drafts, loan, and loan drafts of the RSC in the 1840s, 1850s, and 1900s



Sources: *ibid.*

If we define the piaohao's total liability as equal to deposits plus original drafts and total assets as loans plus loan drafts, then it can be calculated that the debt/asset ratios in the 1840s, 1850s and 1902-9 for the RSC were 0.6, 2.8 and 0.8 respectively. Such high financial leverage indicates that high financial risk existed in the piaohao.

5.3 Incomes and profits

Besides its business structure, the Shanxi piaohao's sources of income and expenses have also been neglected in previous studies, but are important for understanding their historical development. On the basis of the balance sheets from different branches of the RSC and the number of branches operating in different periods, Table 5-5

summarises the RSC annual revenues and expenses in the 1840s, 1850s, 1860s, and 1900s.

Table 5-5: Estimates of the revenues and expenses for the RSC in the 1840s, 1850s, 1865-9 and 1902-9 (Tls)

	1840s	1850s	1865-9	1902-9
Revenues				
Interest income	92,372	22,703	0	150,031
Remittance service income	42,747	18,927	120,422	855,205
Silver weight and purity disparity income	7,126	7,610	1,411	0
Other income	1,039	4,999	0	19,123
Sum of revenues	143,285	54,240	121,833	1,024,359
Expenses				
Property rents	1,206	3,007	3,400	3,526
Board expenses ^a	5,952	15,322	19,589	45,713
Paid interest	6,073	15,530	0	125,749
Paid remittance service fees	0	0	15,346	567,767
Expenditure of weight and purity disparity	11,979	0	0	1,112
Postage, banquet, and office expenses	0	0	0	38,643
Bad loan amortization	0	1,615	0	5,256
Other expenses	5,959	2,920	4,463	15,034
Sum of expenses	31,170	38,395	42,798	802,799
Profits	112,115	15,845	79,035	221,560
Expenses/ Revenues ratio	0.22	0.71	0.35	0.78

Sources: RSC annual balance of 1849 Pingyao, 1852 Qingjiangpu, 1853 Jiangxi, 1856 Suzhou, 1867 Yangzhou, 1906 Xian, Kaifeng, Zhoujiakou, Hangzhou, Guilin, Guangzhou, Changsha, Xiangtan, Guangzhou and Chongqing branches (Advanced Asia Studies Library, University of Tokyo).

Note: On the basis of the RSC balance sheets in different periods, this thesis first estimates the average values for each income and expense item for one branch. Then, based on the number of branches that the RSC had in the corresponding period, the thesis estimates these values for the RSC. For example, in the 1900s the RSC had balance sheets for 10 branches. Based on these, the average values of each income and expense item for one branch can be calculated. Since the RSC had 18 branches in this period, I multiply by 18 the averages for each income and expense item to obtain the RSC annual incomes and expenses for each item in the 1900s.

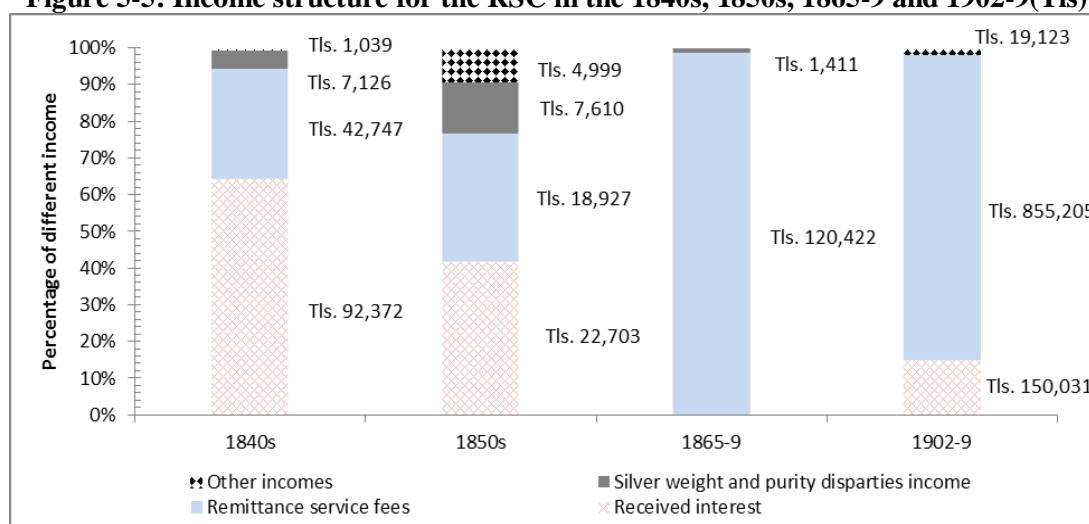
^a Board expenses represent expenditure on employees' food, accommodation and salaries.

The table shows that the RSC's revenues included 'income from interest', 'remittance service fees', 'silver weight and purity disparity' and other items, such as 'occasional currency exchange income', and 'sales of official title donations income'. Annual

expenses involved ‘property rents’, ‘expense’, ‘paid interests’, ‘paid remittance service fee’, ‘paid silver weight and purity disparity’, ‘bad loan amortization’, ‘postage, banquet and office expenses’ as well as other expenses, such as ‘silver escorting fees’ and ‘travel expenses’. Between the 1840s and the 1900s, the sums of income increased from Tls. 143 thousand to Tls. 1 million and the sum of expenses grew from Tls. 31 thousand to Tls. 802 thousand. The ratio of expenses/revenues grew from 0.22 to 0.78 during the same period. These results suggest that as the RSC revenues rose, its expenses also increased. Although a mounting expenses/revenues ratio indicates that the RSC profit margin narrowed, its annual total profits doubled from Tls. 112 thousand in the 1840s to Tls. 222 thousand in the 1900s.

On the basis of Table 5-5, Figure 5-5 and Figure 5-6 depict the RSC annual income and expenses structure respectively.

Figure 5-5: Income structure for the RSC in the 1840s, 1850s, 1865-9 and 1902-9(Tls)



Sources: Ibid.

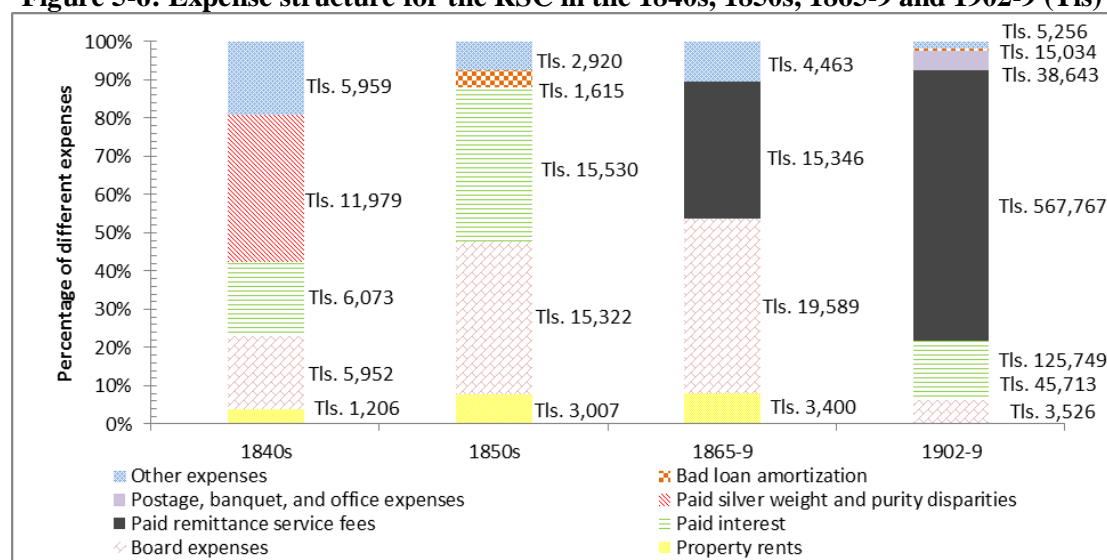
Note: The size of each stacked column is the proportion of different businesses, and the figure next to the column is the value of the business.

Figure 5-5 shows among the RSC’s incomes, ‘received interest’ and ‘remittance service fees’ held 62% and 28% of the 1840s total income respectively and occupied 42 % and 33 % respectively of the 1850s total income. Besides these two, incomes from the ‘silver weight and purity disparities’ and ‘other incomes’ together occupied 8% and 25% of the total income in the 1840s and 1850s respectively.

From the 1860s, income from ‘remittance service fees’ increased abruptly to 99% while other types of income almost vanished from the RSC’s balance sheet. This change can be explained by the change of the RSC’s income sources classification. From their business letters and balance sheets my thesis has identified in the 1840s and 1850s, the RSC combined the interest earned from loan drafts and loan business together and designated them ‘received interest’. However, from the 1860s, to make their letter writings quicker, they separated the two and ascribed the interest from loan drafts to the ‘remittance service fees’ and this explained the reason of the ‘remittance service fees’ rise. As time went to 1902-9, with an increase of loan business (Figure 5-3), income from the ‘received interest income’ emerged with a share of 13%.

Corresponding to the income structure, Figure 5-3 shows expenses structure for the RSC. As it shows in the 1840s there were five types of expense with ‘paid silver weight and purity disparities’ had the largest share of 40%, followed by ‘other expenses’, ‘paid interests’, ‘board expenses’ and ‘property rents’. Expenses on the ‘bad loan amortizations’ occurred in the 1850s, with a share of 3%.

Figure 5-6: Expense structure for the RSC in the 1840s, 1850s, 1865-9 and 1902-9 (Tls)



Sources: Ibid.

Note: The size of each stacked column is the proportion of different businesses, and the figure next to the column is the value of the business.

As with the income structure, in the 1860s, the piaohao separated ‘paid interest on original drafts from paid interest on deposits. This change made ‘paid interest on

remittance' climb from zero to 40%. Moreover, 'board expenses' also increased their share by 10% to 50%. In the period of 1902-9, 'postage, banquets, and office operations' expense occurred, with a share of 5%. Furthermore, 'paid remittance interest' grew further from 30% to 70% and became the largest expense for the RSC in this period. An increase in 'paid remittance service fees' in the 1900s indicates competitions between the Shanxi piaohao and other financial institutions intensified. To win the competition, piaohao had to pay more remittance service fees on original drafts.¹¹³

Table 5-6 shows the annual revenue and profits for all the Shanxi piaohao during the 1840s-1900s. It finds that as with their business, these piaohao experienced a similar rise and decline in their revenue and profits. From the 1840s to the 1900s, the piaohao annual revenue increased 16 times from Tls.1.5 million to Tls.25 million. Far from a big jump in annual revenue, their annual profits increased only three times from Tls.1.4 million to Tls. 4.4 million and this could be attributed to growing expenses. For example, for the RSC piaohao, between the 1840s and the 1900s, 'board expenses' soared from Tls. 5,952 to Tls. 45,713,¹¹⁴ 'paid interest' increased from Tls.6, 073 to Tls.125, 749, and 'paid remittance service fees' grew from Tls.0 to Tls. 567,767.¹¹⁵

¹¹³ Competitions between piaohao and other types of financial institutions will be further examined in 6.2 and 6.3, below.

¹¹⁴ As my thesis has illustrated in 3.2 (p.83.) when modern Chinese banks just set up, they preferred to hire piaohao employees. Therefore, an increased cost in 'board expenses' could be a result of retaining members of staff.

¹¹⁵ As my thesis has illustrated on p.139, in the 1840s and 1850s, the RSC combined the interest paid to original drafts and deposit business together and designated them 'paid interest'. However, from the 1860s, my thesis has found they separated the two and ascribed the interest paid to original drafts to the 'paid remittance service fees'. This explained why this type of expense appeared and grew quickly.

Table 5-6: Average annual income and profits for one piaohao branch, one piaohao, and all the Shanxi piaohao from the 1840s to the 1900s (Tls. 1,000)

	1840s	1850s	1860-4	1865-9	1870s	1880s	1890-3	1894/5	1896-9	1900/1	1902/9
Average per branch											
Income	12	4	4	7	11	14	16	16	43	3	52
Profits	9	2	2	5	3	8	9	9	24	2	9
Average per piaohao											
Income	143	63	39	120	194	244	411	397	1,066	65	934
Profits	112	29	25	79	57	139	233	225	605	37	163
All the Shanxi piaohao ^a											
Income	1,791	1,064	621	1,927	5,036	5,866	10,274	9,917	26,640	1,695	25,231
Profits	1,401	493	394	1,261	1,482	3,332	5,835	5,633	15,132	963	4,414
The number of branches	12	17	11	17	17	18	26	25	25	21	18
The number of Shanxi piaohao	15	17	16	16	26	24	25	25	25	26	27

Sources: Ibid.

Note: my thesis uses business letters and balance sheets of various piaohao to estimate average annual income and profits for one branch and one piaohao.

^a Annual income and profits for all the Shanxi piaohao are calculated by multiplying average income and profits per piaohao with the number of Shanxi piaohao in operation in each period.

5.4 Concluding remarks

Based on a comprehensive data set, this chapter studies the historical development of the business, incomes and profits under scrutiny. By compiling statistics on the piaohao's government business, the present chapter can for the first time demonstrate that the piaohao's government business occupied only 10% of its total business and the income it earned from the government on average occupied only 1.4% of its total income. Therefore, the decline of the Shanxi piaohao cannot be ascribed to the reason given by Chen (1937 p.132.) and Kong (1984): "the piaohao lost their largest client, the Qing government, and dissolved." When estimating the piaohaos' business volumes, my thesis finds although it experienced troughs, the piaohaos expanded their remittance, deposit and loan business over time. Among these three types of business, remittances always occupied more than 80% of the piaohaos' total business, followed by loans and deposits. When my thesis further calculates the piaohaos' debt/asset ratios in different periods, it finds that a high financial leverage indicated high risk in the piaohao. Last but not the least in importance, when my thesis examines the growth of the piaohaos' incomes and profits, it finds that, piaohao's profit margins narrowed after the 1900s. After investigating this historical development, the next chapter, drawing on some preliminary results, explores the piaohao's sudden decline in the 1910s.

Chapter 6. Epilogue: Explorations on the piaohao's decline

As the above chapters have shown, the Shanxi piaohao during its development lived through much political turmoil. However, when the 1911 Revolution broke out and endless civil wars ensued, most Shanxi piaohao went bankrupt and in the 1910s the bank collectively declined.¹¹⁶ Drawing on some preliminary results, this section explores the piaohao's decline by examining the impact of the 1911 Revolution and the expansion in China of the foreign and modern banks. It also shows what efforts it made to save itself when facing its greatest crisis.

6.1 The impact of 1911 Revolution and the piaohao's last efforts

The Shanxi piaohao survived the Taiping Rebellion, the First Sino-Japanese War and the Boxer Rebellion. However, these political disruptions were more or less forewarned and therefore the Shanxi piaohao could minimize its losses by escorting silver back to Pingyao and shutting down branches in advance.¹¹⁷ However, unlike previous political disturbances, the 1911 Revolution broke out overnight and quickly spread nationwide.¹¹⁸ Although it ended with the abdication of the Qing Emperor Puyi on 12th February 1912, his action brought no peace to China but cast it into endless civil wars between warlords who were ambitious to control the country; the resulting massive looting and atrocities caused the piaohao huge losses.

¹¹⁶ As my literature review illustrates, the piaohao's decline has led to many different arguments. Some scholars (Chen 1937, Kong, 1984) argue that it was due to their intimate relationship with the Qing government. As the Qing regime was overthrown, the piaohao dissolved with it. Another scholar (Jang 2006) attributes the decline of the piaohao to China's currency reforms in 1907, while yet others maintain that the piaohao's decline was their limited working capital and competition from the other institutions. Since no comprehensive study so far has analysed how the 1911 Revolution and the expansion of the foreign and modern banks impacted on the Shanxi piaohao, these have become the focus of the present thesis.

¹¹⁷ From the RSC's business correspondence, this thesis has found that, during the Taiping Rebellion and the Boxer Rebellion, the head office requested branches to shut and their staff to go back to Pingyao if they risked harm from the riots (Huang, 2002a pp.1060-70.).

¹¹⁸ The 1911 Revolution or the Xinhai Revolution was an uprising led mainly by the Chinese United League [Tongmenghui 同盟会]. It overthrew the Qing court and aimed to establish a republic. Four months after the 1911 Revolution, two-thirds of the Chinese provinces declared independence and joined the revolutionary army.

The impact of the 1911 Revolution on business and commerce can be found in newspaper reports and official memorials. As the Military Memorial [Junlu 军录] recorded on 15th October 1911, the news of the revolution shook the Beijing market, to set prices soaring and runs on the native banks.¹¹⁹ The Tianjin guild also reported in May 1912 that, since the Wuchang Uprising,¹²⁰ most of the financial institutions in Tianjin had been closed and other firms were operating in difficult conditions.¹²¹

Like many other firms, then, the Shanxi piaohao also suffered considerable losses during the revolution. On 30th September 1912, the RSC and eleven other Shanxi piaohao submitted a joint letter to the newly established Beiyang Government and applied for compensation for their losses.¹²² As the letter stated:

“The Shanxi piaohao have run the remittance business for a century and have won nationwide trust for our professional service and reputation. Besides our business, we also play active roles in supporting national industries, relieving the government financial constraints and natural disasters. Although we suffered losses during the First Sino-Japanese War and the Boxer Rebellion, we had adequate capital and profits to enable us to go on running. However, the Wuchang Uprising broke out without warning and caused us huge losses. Since our business was based in southern China, the independence of Hubei, Hunan, Guangdong and other southern provinces forced our business in these provinces to grind to a halt. Our loans could not be recovered and our deposits were exhausted. Since the remittance business is crucial for our country’s financial and commercial activities, we sincerely hope the government can help us out of this difficulty.”

¹¹⁹ “御史玉春为粮价骤增旗营兵米请提前开放的奏折[Official Shi Yuchun’s memorial to the throne regarding the increase in rice prices and application to distribute army’s rice in advance]”, in Huang, *Archival materials of the Shanxi piaohao*, p.483.

¹²⁰ The Wuchang Uprising was the first uprising of the Xinhai Revolution.

¹²¹ “众钱上稟 [Joint reports from money dealers]”, 天津商会报告 [Tianjin Guild Archives], 业务类 [Business], volume 150, 1912, in Huang, *Archival materials of the Shanxi piaohao*, p.486.

¹²² The term ‘Beiyang Government’ refers to the government of the Republic of China, which was internationally recognized as the legitimate Chinese government from 1912 to 1928.

In addition to this letter, the piaohao also attached two letters which listed their property and cash losses and their loans and deposits during the revolution. On the basis of these two lists, Table 6-1 and Table 6-2 show corresponding descriptive results.

Table 6-1: Descriptive results for the property and cash loss list (Tls. 1,000)

	Mean	S.d.	Min	Max	Sum
Silver in cash	111	94	8	304	1,335
Properties	30	24	0	77	308
Sum	137	100	8	349	1,644

Sources: Compiled from 'The joint letter of the Tian Cheng Heng and the other eleven Shanxi piaohao to the Beiyang Government', 30th September 1913, Ministry of Finance Archive, Beiyang Government (Huang 2002a, p.488.).

Table 6-1 shows that, on average, each of the twelve Shanxi piaohao lost a cash reserve of Tls. 111 thousand and properties valued at Tls. 30 thousand. In total they lost Tls. 1.6 million in cash and properties. Combining this figure with an estimate of all the Shanxi piaohao's annual profits (Table 5-6), we see that this value equalled one fourth of all the annual profits made by the Shanxi piaohao in the period 1902-9.

Besides the losses from looting, innumerable bad loans and the continuous withdrawal of deposits also worsened the piaohao's situation. Table 6-2 sets out details of the loan and deposit business that the twelve Shanxi piaohao reported to the Beiyang government; these suggest that during the 1911 Revolution each piaohao on average reported Tls. 1.7 million in deposits and Tls. 2.2 million in loans. According to its statement to the government, from late 1911 to 1913, less than 10% of its loans had been recovered.¹²³ For a piaohao which had about Tls. 1 million paid up capital, a loss of this kind could be devastating.¹²⁴

¹²³ “山西票号维持商况之情愿 [Petition of the Shanxi piaohao to maintain their business]”, 3rd January 1914, 申报 [Shenbao Newspaper] in Huang, *Archival materials of the Shanxi piaohao*, p.504. Besides the Shenbao, other documents, e.g. Li (1917, pp.5-6.) and Wei (1944, p.21.) also documented that, in order to keep their reputation, the Shanxi piaohao allowed continuous withdrawal of deposits, but bore many bad loans.

¹²⁴ This estimation is consistent with Chen (1937, p.38.), who points out that since the Shanxi piaohao had a policy of taking deposits in the north and making loans in the south, when southern China declared independence many piaohao could not recover their loans and went bankrupt.

Table 6-2: Descriptive results for the loan and deposit Business during the 1911 Revolution (Tls. 1,000)

	Mean	Min	Max	Sum
Deposit	1,792	499	3,051	25,100
Loan	2,251	507	3,519,	31,500
Total	4,043	1,006	6,555	56,600

Sources: *ibid*

The loss of the Shanxi piaohao was not limited to the above. As Zhang Zhongquan, a former piaohao employee, stated in 1961: “When southern China declared independence, the warlords were desperate to issue paper money and force it into circulation. The over issuance caused inflation and the later suspension of convertibility caused the piaohao’s deposit to become the equivalent of useless paper notes (Zhang, 1961, cited in Huang, 2002a, p.500.).”¹²⁵

Facing the risk of elimination, these Shanxi piaohao turned to the Beiyang Government both for loans and for help in chasing their own loans. But their lack of connection with this newly established government dimmed their hope. In January 1914, the Shanxi piaohao elected six representatives to visit Xiong Xiling, the Minister of Finance. These piaohao representatives proposed to maintain their business by borrowing funds from the government or from foreign banks guaranteed by the government. Although the Finance Minister promised he would to his best to meet their requests, he resigned six months later.¹²⁶ As the State Council replied on 20th December 1914, ‘The Shanxi piaohao has been excellent in its reputation and performance for a long time, and the government should help the piaohao out of its present difficulties. However, since the government is also facing financial constraints, if the piaohao could rely on itself, it would bring about notable results.’¹²⁷

¹²⁵ According to Zhang the provinces which issued paper notes but suspended convertibility later included Sichuan, Shanxi, Guangdong, and Hunan (Zhang, 1961, cited in Huang, 2002a, p.500.)

¹²⁶ “山西票号维持商况之情愿 [The petition of the Shanxi piaohao to maintain their business]”, 申报 [Shenbao Newspaper] 3rd January 1914, in Huang, *Archival materials of the Shanxi piaohao*, p.504.

¹²⁷ “山西汇商天成亨等号沥受战事影响商业濒危公肯救济有关文件 [Documents relating Tian Cheng Heng and other Shanxi piaohao calling for government rescue]”, 北洋政府档案 [Beiyang Government Documents], No.1027, Volume 206, in Huang, *Archival materials of the Shanxi piaohao*, p.505.

The Shanxi piaohao's second effort was to unify all its branches into establishing a Shanxi Remittance Industrial Bank [Shanxi huitong shiye yinghang 山西汇通实业银行]. According to the bank's regulations, piaohao needed to dissolve before joining the bank, and a separate bank would be established. The bank was planned to have a paid up capital of 3 million silver dollars with 30,000 shares for subscription. However, in its setting up, it stated that before subscribing enough capital from the public it planned to borrow 3 million silver dollars from domestic and foreign firms, guaranteed by the government.¹²⁸ This meant instead of itself investing some or part of the initial capital, the bank planned to borrow all the initial capital from elsewhere.

However, the road to establishing such as an enterprise as a bank is hard from the start. The Shanxi Remittance Industrial Bank also planned to borrow 2 million pounds from an Austrian firm. This loan agreement was in fact finalised, but it was aborted by the start of the First World War.¹²⁹ Besides Austria, In 1916 the Shanxi Remittance Industrial Bank planned to borrow 5 million silver dollars from an American banking syndicate to start business, but the agreement to do so had been delayed because the Beiyang government would not agree to use the taxation revenue from a Chinese province to underwrite this loan.¹³⁰

The last effort made by the Shanxi piaohao was to ask the government to repay the nation's debt to the bank. In 1908, under the persuasion of the Qing court and the patriotic sentiment of the piaohao merchants, the whole Shanxi piaohao lent the Qing court Tls.1.6 million to redeem the Shanxi province's mining rights from the British and allow a firm named the 'Protect Shanxi Company [baojin gongsi 保晋公司]' to be established.¹³¹ Again, in 1910, facing the shutdown of the "Datong-Huashan

¹²⁸ “美国商务委员安脑尔函复洽议山西钱业商借中国通用洋五百万元文件[Letter in Reply of the US Commerce Committee to the Shanxi Merchants Regarding its 5 Million Silver Dollars' Loan]”, 北洋政府档案 [Beiyang Government File], No 1027, in Huang, *Archival materials of the Shanxi piaohao*, p.511.

¹²⁹ “记山西票号[Documentary of the Shanxi piaohao]”, 东方杂志 [Oriental Journal], 14th June 1917, in 山西票庄考略 (*Investigation of Shanxi piaohao*) Qitian Chen, 商务印书馆 (Commercial Press), 1937, p.49.

¹³⁰ Ibid.

¹³¹ “晋人踊跃从公[Shanxi people are active in supporting infrastructure construction], 大公报 [Dagong Newspaper], 25th February 1908, in Huang, *Archival materials of the Shanxi piaohao*, p.337.

Railway [tongpu tielu 同蒲铁路]”, the whole Shanxi piaohao invested another Tls. 600 thousand.¹³² However, when the Qing court was overthrown by revolutionaries, the firm Bao Jin went bankrupt and the Datong-Huashan Railway was nationalised.

When it borrowed the money, the Qing court promised to repay it by the proceeds of land taxation. However, from the piaohao’s joint letter to the Beiyang Government, it appears that the Qing court never paid either interest or principal. In 1914, when the piaohao asked the Beiyang Government to pay back this loan to help it out of trouble, the reply was that there was no record of the loan.¹³³ In 1916, during the short period of restoration, these Shanxi piaohao made their last claim for repayment. But according to the existing evidence, the piaohao never received a reply.¹³⁴

From the above illustrations, it can be inferred that the political and military turmoil in 1911 and afterwards severely impaired the piaohao business. Although these piaohao merchants made efforts to save themselves, the lack of capital and government support worsened their situation.

6.2 Expansion of foreign banks

Besides the political disruption, the rapid expansion of foreign and modern Chinese banks after the 1910s also endangered the piaohao’s survival. In 1845, a British-Indian joint venture, called the New Oriental Bank, established a branch office in Shanghai and opened the foreign banking business in China. From this beginning, the British enjoyed a forty-year monopoly of foreign banking business in the country. Later in the 1890s, Russian, German, Japanese, French and American banks came to China as their international rivalry for interest continued to grow. By the end of 1910,

¹³² “同蒲铁路开办有期 [Datong-Huashan Railway will be constructed as planned]”, 大公报[Dagong Newspaper], 7th May 1910, in Huang, *Archival materials of the Shanxi piaohao*, p.344.

¹³³ “财政部调查各省财政金融有关文书[Investigations of the Ministry of Finance into local business conditions]”, 北洋政府档案 [Beiyang Government Files], in Huang, *Archival materials of the Shanxi piaohao*, p.345.

¹³⁴ As my thesis has illustrated in Table 5.3, the government remittance in average occupied 4% of the piaohao’s remittance. Income earned from the government remittance took up 1.4% of the piaohao’s total income. Therefore, the loss of the government business is not a key factor in the piaohao’s failure.

about 15 foreign banks were functioning in China, opening about 65 branches there (Allen and Donnithorne, 1954).

Foreign banks, by virtue of their extraterritorial rights, operated free of Chinese laws. Not only did they monopolise Chinese international remittance and foreign trade financing, but also issued banknotes circulated in China, accepted deposits from Chinese officials and citizens and made loans to Chinese native banks (Cheng, 2003 p.19.). After 1895, their increasing loans to the Qing government gave them a new opportunity to handle the revenues from the Chinese customs which had become pledges against foreign loans (Wang, 1983, p.89.).

The remittance business undertaken by these foreign banks comprised international remittance, Chinese domestic remittance and Chinese overseas remittance [华侨汇款]. Although no concrete data on their Chinese domestic remittance are left, foreign banks, according to Wang (1983 p.177.), began to penetrate the Chinese remittance market in the 1880s. As the 1882-1892 Hankou Decennial Report stated: 'Foreign merchants' business in Hankou, especially tea and other local products, used to transacted in cash, but recently we have found that Chinese merchants have begun to employ foreign banks to send money. Chinese merchants' trust in foreign banks, especially the HSBC, is increasing (Hankou Decennial Reports in 1882-1891, cited in Wang, 1993, p.177.).

From the 1900s documents were reporting that the competition between foreign banks and the Shanxi piaohao was becoming intense. As Li Mianlin, Jiangxi's Provincial Governor stated in a memorandum of 1901, due to a growing number of foreign banks set up in treaty ports, the piaohao's profits were diminished.¹³⁵ Tadashi also reported in 1908 that, to make up the funds to the value of Tls.10 million for cotton yarn remitted from Tianjin to Shanghai, foreign banks transferred 50%, the Shanxi piaohao committed 20% and other firms remitted the remaining 30%. But for cities with no foreign banks, the Shanxi piaohao still monopolised the local remittance

¹³⁵ “江西巡抚李勉林中丞复奏变通政务折稿 [Memorandum of Jiangxi Provincial Governor Li Mianlin]”, in Huang, *Archival materials of the Shanxi piaohao*, p.372.

business.¹³⁶ In the same year, the Dagong Newspaper also reported that foreign banks took the lion's share of the piaohao's business.¹³⁷ Besides this anecdotal evidence, my estimates of the piaohao's business (Table 5-4), also finds that in the 1900s the growth rate in the piaohao's volume of remittances slowed down.¹³⁸

Table 6-3 illustrates the number of foreign banks that operated in China between the 1840s and 1920s. It shows that in total 31 foreign banks traded and the number of banks in operation steadily increased from one in the 1840s to 23 in the 1910s. The most striking growth occurred between the 1880s and 1890s, when this number grew from six to 13. Moreover, it is noticeable that it was during the 1910s, when many Shanxi piaohao went bankrupt, that the number of foreign banks reached a peak.

Table 6-3: Numbers of foreign banks that operated in China from the 1840s to the 1920s

Period	the number of foreign banks entered into China	the Number of foreign banks in operation
1840s	1	1
1850s	2	3
1860s	3	6
1870s	3	8
1880s	0	6
1890s	7	13
1900s	2	14
1910s	10	23
1920s	3	19
Total	31	19

Source: Based on Wang (1983, p.296) 'A list of the Foreign banks operated in China'.

¹³⁶ Kishine Tadashi, “天津的票庄 [Shanxi Piaohao in Tianjin]”, 清国商业总览 [Business conditions in China], in Huang, *Archival materials of the Shanxi piaohao*, p.373.

¹³⁷ “信义银行招股启示 [Subscription on the Xinyi Bank's stock]”, 大公报 [Dagong Newspaper], 8th March 1908, in Huang, *Archival materials of the Shanxi piaohao*, p.373.

¹³⁸ On the basis of Table 5-4, my thesis calculates that between the 1880s and the period 1896-9, the remittance volume for all the Shanxi piaohao doubled, and from the period of 1896-9 to that of 1902-9, this volume grew by 37%. Moreover, according to Wang's statistics on China's imports and exports (Wang, 1987, p.150.), during the same periods, China's import and export volumes increased by 63% and 75% respectively. This means that in the 1900s the growth rate of the remittance volume of the Shanxi piaohao did not keep up with the growth rate of the trade volume.

Table 6-4 shows the nationalities of these banks: overall it was the British banks that had the largest number (10), followed by Japanese, American, French and German, Russian, and Belgian banks, in that order. The year that each country set up a bank in China closely follow the dates of the countries' treaties with the Chinese government.¹³⁹ Regarding the average paid up capital of these foreign banks, Table 6-4 shows that when they were set up it was the German banks that had the largest paid-up capital. Compared with this, the British and Japanese banks had relatively small paid up capitals at first, but it grew rapidly. By managing the Qing court indemnities, issuing banknotes, financing international trade, loaning to the native banks (qianzhuang) and providing remittance services, these foreign banks once played an important role in the Chinese financial market. However, when the WWI broke out, many foreign banks closed their Chinese offices and left room for the growth of modern Chinese banks (Cheng, 2003 pp.75-77.).

Table 6-4: Description of foreign banks operating in China¹⁴⁰

Country	Number of foreign banks operating in China	Net number of foreign banks operating in China in 1926	The year that the country's first bank entered China	Average paid-up capital when set up (Tls. 1,000)	Average paid-up capital in 1926 (Tls. 1,000)
America	6	4	1902	4,570	4,335
Britain	10	7	1845	5,038	35,859
Belgium	1	1	1902	-	101,351
France	3	2	1860	26,500	273,600
Germany	3	1	1872	40,804	7,500
Japanese	7	7	1893	5,250	74,970
Russia	1	1	1896	6,000	15,000

Source: Ibid.

Note: '-' means data are not available.

¹³⁹ For example, after the Qing government signed the Treaty of Nanjing with France and Britain in 1842, British and French banks opened branches in China. With the notification of the Treaty of Shimonoseki with Japan in 1895, Japanese banks entered the country. After signing the Treaty of 1901 with Belgium and ten other countries, a Belgian bank opened branches there.

¹⁴⁰ Exchange rates between silver tael and different currencies are calculated according to the terms of treaties and loan agreements between the Qing government and other nations from the 1890s to the 1910s. They include the Treaty of Shimonoseki [马关条约], the Russia-Franco Loan [四厘借款合同], the Anglo-German Loan [英德借款] and the Treaty of 1901 [辛丑条约]. These treaties and loan agreements involved many silver taels in exchange for local currencies that the Qing had to pay to these countries.

6.3 Development of Chinese modern banks¹⁴¹

6.3.1 General growth of the Chinese modern banks

The first Chinese modern bank was established in 1897 in response to China's new financial demands from modern industries, infrastructures and other modernization programs (Cheng, 2003 pp.22-27.). On 27th May, 1897 the Imperial Bank of China (IBC, hereafter) [zhongguo tongshang yinhang 中国通商银行] was established, with 3.5 million silver dollars as paid-up capital and 1.4 million silver dollars as working capital. As the first Chinese bank which borrowed running models and regulations from Western banks, the IBC was invested and controlled by the Qing court.¹⁴² Under the patronage of the government, the IBC enjoyed privileges in managing governmental funds and issuing banknotes. Two years after its establishment, its total assets reached 10 million silver dollars, with eleven branches spread nationwide. However, from the outset, this bank suffered more misfortune than blessing: in 1900 the Boxers plundered its Tianjin and Beijing branches of hundreds of thousands of silver dollars. In 1903 the diffusion of 300,000 silver dollars in counterfeit banknotes from its Shanghai branch heavily damaged its reputation.¹⁴³

Compounding these false steps, a badly-judged business strategy also hindered the IBC's development. As the largest and the first modern Chinese bank at the time, the IBC saw official remittance as its only source of profit and overlooked other banking business (Cheng, 2003 p.29.). However, although the central court required local officials to employ the IBC for governmental remittance, the Shanxi piaohao still remitted substantial government funds and it was not until the Great Qing Bank (GQB, hereafter) [daqing yinhang 大清银行] was established in 1907 that the piaohao's

¹⁴¹ The term 'modern banks' here mainly denotes banks organized in joint-stock form and run on the model of Western banks.

¹⁴²“中国人民银行上海分行金融研究所 [SHCPB Institute of Finance, Shanghai Branch, Chinese People's Bank]”, in Cheng, *Banking in modern China*, p.25.

¹⁴³ Ibid., p.27.

government business began to decline.¹⁴⁴ Unlike the IBC, whose sole mission was to monopolise the government remittance business, the QGB had a very broad vision, and their business included commercial remittance, note issuance, deposit and loan business.¹⁴⁵ Therefore, besides the government remittance, piaohao also confronted competitions from the QGB in other business.¹⁴⁶ Besides the QGB and IBC, the General Post Office [youzheng zongjv 邮政总局] was established in 1911 and ran remittance business, the Postal Remittance and Saving Bank [youzheng chujin huiye zongjv 邮政储金汇业总局] was set up in 1930 with 3,000 branches. (Xu, 2007 pp.148-50.). All these newly established banks could be threats to the piaohao with their greater capital power and intensive branch networks.

In the 1910s there were a total number of 17 modern Chinese banks. These modern banks were not only engaged in remittance, but also took deposits from the public, loaned to industries, and discounted bills of exchange which had been ignored by the piaohao (Cheng 2003, p.34.).

Table 6-5 lists the twelve principal Chinese banks established between the 1890s and the 1920s. From this it can be found that, unlike the Shanxi piaohao whose headquarters were in three small towns in the province of Shanxi, all these banks had their headquarters in centres of trade, such as Shanghai, Beijing or Tianjin. Such locations gave these banks first-hand business information and enabled them to make timely decisions. Moreover, apart from the four official banks, eight private banks were established and run by merchants from Jiangsu or Zhejiang provinces, who were

¹⁴⁴ According to my statistics on the volume of the piaohao's government remittances (Appendix II), between 1898 and 1906 this volume increased from Tls. 10 million to Tls. 22 million. But in 1907 the piaohao's government remittance business fell back to Tls. 10 million and dropped further to Tls. 5 million in 1911. This estimate is consistent with the findings of Cheng (2003, p. 28), who judged the IBC's remittance volume to have been Tls. one million in 1897, plummeting to Tls. 646 thousand in 1905.

¹⁴⁵“试办银行章程[Experimental constitution of the Daqing Bank], Article 1, Daqing Bank Clearance Office”, in Cheng, Banking in Modern China, p.31.

¹⁴⁶ Before the Qing court was overthrown in 1911, the value of the annual notes issuance, deposits and loans in the GQB climbed from Tls. 0.8 million to Tls. 25 million, Tls. 8.5 million to Tls. 63 million, and Tls. 8 million to Tls. 59 million respectively (Cheng, 2003, p.32.). Combining these values with my previous estimate of the piaohao's business (Table 5-4), it can be found that, although the annual loan volumes for the whole Shanxi piaohao in the 1900s (Tls. 34 million) was comparable with that of the modern Chinese banks, the piaohao's deposit business (Tls. 6.3 million) was much smaller than that of the GQB.

collectively known as the ‘Jiangzhe Financial Clique’ [jiangzhecaifa 江浙财阀]. Although at first these modern banks hired experienced piaohao staff members as middle-level managers, these were gradually replaced by graduates of prestigious overseas universities (Cheng, 2003, p.171). Moreover, most private banks started with invested capital of hundreds of thousands of taels, but usually within a decade their paid-up capital had expanded to several million. This is in contrast to the Shanxi piaohao, whose paid-up capital remained at about Tls. 1 million (Huang, 2002a, p.581.).

Table 6-5: Principal Chinese modern banks

Bank	English translation	Year of establishment	Head office	Paid-up capital when set up (Tls. 1,000)	Paid-up capital in 1927 (Tls.1,000)	Type
中国通商银行	Imperial Bank of China	1897	Shanghai	1,000	-	Government
大清银行	Great Qing Bank	1905	Beijing	10,000	-	Government
交通银行	Bank of Communication	1908	Shanghai	5,000	-	Government
浙江实业银行	Zhejiang Industrial Bank	1908	Shanghai	511	1,296	Government-private venture
信诚银行	Xincheng Bank	1906	Shanghai	3,600	-	Private
浙江兴业银行	National Commercial Bank	1907	Hangzhou	180	1,800	Private
四明商业银行	Ningbo Commercial and Saving Bank	1908	Shanghai	1,500	-	Private
上海商业储蓄银行	Shanghai Commercial and Saving Bank	1915	Shanghai	50	1,800	Private
盐业银行	Yien Yieh Commercial Bank	1917	Beijing	900	5,400	Private
金城银行	Kincheng Banking Corporation	1917	Tianjin	360	5,040	Private
大陆银行	Continental Bank	1919	Tianjin	720	5,760	Private
中南银行	China South and Sea Bank	1921	Shanghai	3,600	-	Private

Sources: Based on Huang (2002, pp.373-376.) and Cheng (2003, pp.34-36., p.47.)

Note: ‘-’ means data are not available.

In addition to Table 6-5, Table 6-6 shows the total number, total paid-up capital and total business volumes of these modern Chinese banks between 1897 and 1936. It can be found that the first modern Chinese bank was established in 1897, but, largely due to the effects of the Boxer Rebellion (1900/1), the second Chinese bank was not set up until 1905. After this, the number of Chinese modern banks grew steadily from 3 in 1905 to 164 in 1936. As well as the number of banks, their total paid up capital, note issuance, loan and deposit volumes increased substantially during the same period.

Table 6-6: Total paid-up capital and business volume of the Chinese modern banks from 1897 to 1936 (Tls. 1,000)

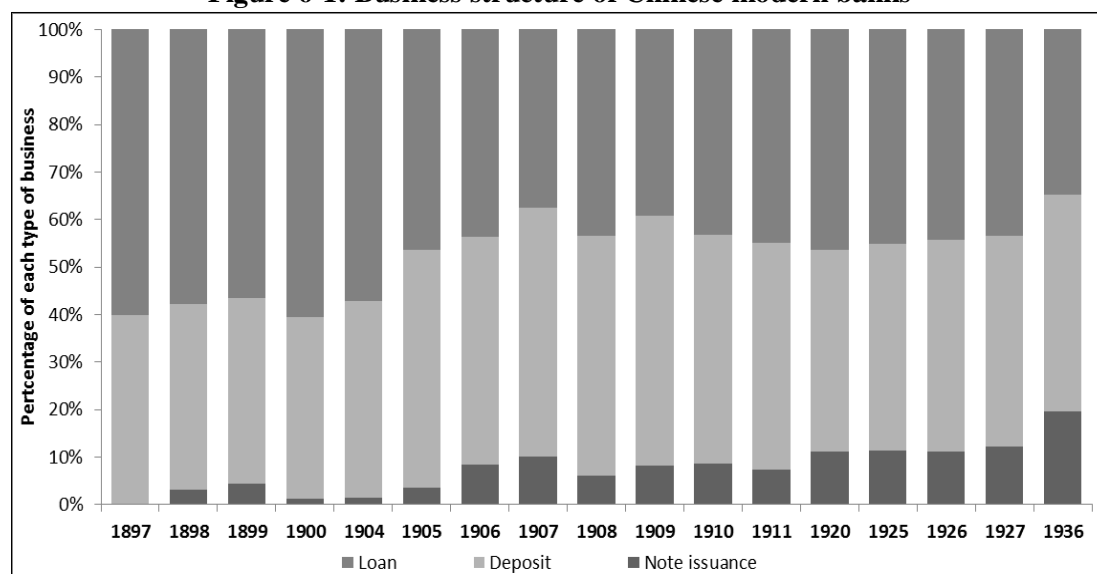
Year	number in operation	Paid-up capital	Note issuance	Deposit	Loan
1897	1	2,520	0	2,592	3,895
1898	1	2,520	207	2,635	3,899
1899	1	2,520	455	3,917	5,695
1900	1	2,520	75	2,307	3,640
1904	1	2,520	67	1,867	2,577
1905	3	3,528	978	13,335	12,404
1906	5	5,400	2,699	15,284	13,964
1907	6	8,650	4,856	25,215	17,973
1908	11	15,743	7,117	59,144	50,877
1909	13	16,934	11,952	75,422	56,304
1910	14	23,321	18,019	101,980	90,997
1911	17	25,276	14,973	97,824	92,048
1920	103	63,420	89,058	341,110	371,140
1925	158	121,781	169,660	655,178	676,781
1926	159	117,945	189,486	753,911	751,360
1927	160	120,195	216,963	785,477	768,256
1936	164	289,941	1,401,624	3,276,914	2,495,606

Source: On the basis of Cheng (2003, p.36; pp.42-43; pp.65-69).

Note: the reason why this list ends in 1936 is that the Second Sino-Japanese War (1937-45) started one year later and China entered a stage of total resistance.

Based on Table 6-6, Figure 6-1 plots the business structure of Chinese modern banks. Like the Shanxi piaohao, this dissertation calculates the total debts/assets ratios of these banks in the 1890s, 1900, 1910s, 1920s, and 1930s. It finds that these ratios increased from 0.5 in the 1890s to 0.8 in the 1900s, and further to 1.1 in the 1920s and 1.7 in the 1930s. Although the financial leverage in these banks increased over time, compared with those of the Shanxi piaohao they were small (Figure 5-4).

Figure 6-1: Business structure of Chinese modern banks



Source: Ibid.

6.3.2 *Difference between the modern Chinese banks and the Shanxi piaohao*

The above section illustrates the general growth of the modern Chinese banks. Drawing on some preliminary results, this section attempts to trace the differences between the Shanxi piaohao and modern Chinese banks in order to explore their different fates.

The first major difference between the Shanxi piaohao and modern Chinese banks lies in the different backgrounds of head office managers. As my thesis has illustrated in Chapter 2, the piaohao head office managers were trained under Confucianism. These managers entered the piaohao as apprentices who learnt about calligraphy, accounting, the abacus and traditional Chinese literature. After 20-30 years' hard work and a series of performance evaluations, outstanding employees would be appointed as the head office managers.

Unlike the piaohao's managers, most modern banks managers were trained under a Western ideology. They had either studied overseas or attended Chinese missionary schools, and then worked for the Chinese offices of foreign banks or official banks (Cheng 2003, pp.47-52.). Having witnessed the foreign banks' operations, these young entrepreneurs established modern Chinese banks and made it one of their objectives to compete with foreign banks to restore Chinese financial sovereignty (Cheng, 2003, p.75.). Despite these examples of ambitious managers of modern banks,

when Li Hongling the branch manager of the WFH piaohao in Beijing sought to persuade his head office to send employees overseas and reform the piaohao as a joint-stock bank, the head managers simply ignored Li's suggestion (Li, 1917 p.59.).

In addition to the backgrounds of the head office managers, the piaohao and the modern banks also had different recruiting strategies. As my thesis has illustrated, in the Shanxi piaohao, employees were selected from the local people. Potential employees came as apprentices to the piaohao at the age of 15-17 and after many years' hard work they would be promoted or granted dividends. Unlike the Shanxi piaohao, there is a shift in modern banks recruitment strategy. When they just set up, they preferred to hire piaohao staff, but as they developed they found piaohao employees have difficulties in adapting to new business models, therefore, they began to recruit graduates of prestigious overseas universities (Cheng, 2003, p.171.).

In order to encourage these people to work for them, the modern Chinese banks designed an attractive welfare and pension system. A good member of staff in a modern Chinese bank earned Tls. 40-90 per annum, equal to the annual income of a formal piaohao staff member with no dividends.¹⁴⁷ However, compared with the piaohao employees who worked late every day and had few vacations, the staff in the modern banks worked six days a week from 8 am until 7 pm and had seventeen days' paid leave per year. Banks including the Bank of China and the Jin Cheng Bank also gave all staff 60 days' paid sick leave and 30 days' maternity leave for female employees.¹⁴⁸ Moreover, many modern banks also had pension schemes for employees who had worked for them for more than ten years and were aged 65 and above. Employees' pensions were 30% to 70% of their salary at the time of retirement.¹⁴⁹

The third difference between the piaohao and modern Chinese banks was the way that they dealt with profits. As my thesis illustrates in Chapter 3, the Shanxi piaohao distributed as dividends an increasing share of their profits, from 33% to 90%, as these expanded. In contrast, the modern Chinese banks reserved their profits for

¹⁴⁷ “上海银行行员服务待遇规则[Regulations of the Shanghai Bank's staff member's salary and bonus]”, in Cheng, *Banking in Modern China*, p.178.

¹⁴⁸ Ibid.

¹⁴⁹ Ibid., p.180.

possible loss (Cheng 2003, p.182.). According to Chen Guangfu, the most prestigious contemporary banker and the founder of the Shanghai Commercial and Savings Bank (SCSB, hereafter) ‘a bank’s profits should be first used to write off bad loans as far as possible.’ Like the SCSB, other major Chinese banks also set aside half of their profits as special capital reserves.¹⁵⁰ This measure guaranteed these banks had enough solid capital to resist political and economic turbulence and ensure their positions in the Chinese financial market (Cheng 2003, p.183.).

Last, the Shanxi piaohao and modern Chinese banks had different business strategies. In the Shanxi piaohao, remittance was the backbone and, as they grew, their loans increased but deposits remained the same. Unlike the Shanxi piaohao, modern banks treated deposits as their prime target and tried by every means to attract deposits from clients (Cheng 2003, p.137.). The control of large sums in deposits enabled the modern banks to make loans and issue banknotes. Besides this, in contrast to the piaohao whose drafts were used only in clearing transactions between two branches, modern banks had bills of exchange which could be endorsed. In addition, unlike the Shanxi piaohao which awarded loans on the basis of personal reputation, modern Chinese banks required their loans to be backed up by material guarantees (Cheng, 2003 p. 148.)

The above four features show that the Shanxi piaohao and modern Chinese banks were largely distinct. Looking back with today’s hindsight, there is no doubt that modern Chinese banks were more advanced in many ways. Therefore, in a situation where China was under the threat of invasion by foreign powers and of civil war, as well as the expansion of the foreign banks and modern banks, the Shanxi piaohao as an indigenous financial institution, began collectively to fall.

6.4 Fall as a group

Just as in its rise, in its decline, the piaohao fell almost as one. Table 6-7 lists the years in which the Shanxi piaohao closed, which shows that the first Shanxi piaohao to go out of business was the RSC piaohao, and after this a chain of piaohao followed

¹⁵⁰ “Chen Guangfu’s letter to Yang Dunfu”, in Cheng, *Banking in Modern China*, p.183.

its example. By 1920, 14 Shanxi piaohao had closed and in the 1920s another six shut down; in 1940 the last two closed.

Table 6-7: The years when the Shanxi Piaohao closed

Year	Name	Year	Name
1911	Ri Sheng Chang	1917	Jin Sheng Run
1912	Qi Chang De	1918	Tian Cheng Heng
1913	Xie Tong Qing		Bai Chuan Tong
	Xie Cheng Qian	1920	Wei Chang Hou
	Da De Chuan	1921	Wei Tai Hou
	Yi Cheng Qian		Xin Tai Hou
1914	He Sheng Yuan		Bao Feng Long
	Da De Yu		Shi Yin Xin
	Zhi Cheng Xin	1924	San Jin Yuan
1916	Wei Feng Hou	1929	Da Sheng Chuan
	Wei Sheng Chang	1940	Da De Heng
	Cun Yi Gong		Da De Tong

Source: Huang (2002a, p.549.)

Table 6-7 shows that the DDT and DDH piaohao survived longer than the other Shanxi piaohao. Both these piaohao belonged to a shareholder, Qiao Zhiyong. As Qiao Dianjiao, his former employee, remembered, the reason for the longer life of these piaohao was the shareholder's strong capital power. Although these two piaohao also suffered considerable loss in 1911, Qiao Zhiyong injected about Tls. 1 million to help his piaohao to maintain operations.¹⁵¹ Surviving the political chaos did not, however, bring these two piaohao back to their previous splendour. After 1911, the DDT and DDH had only seven branches each and by 1935 only four branches were in operation (Qiao, 1961, cited in Huang, 2002a p.558.). Here it should be noted that, besides strong capital power, a somewhat different governance structure may also have been a reason for their longer survival. Unlike other Shanxi piaohao, in which the shareholders let head office managers take charge of everything, the DDT shareholder Qiao Zhiyong supervised his piaohao. As Qiao Dianjiao recalled, "Our shareholder always enjoined us to be cautious and avoid transactions that looked profitable but risky" (Qiao, 1961, cited in Huang, 2002a p.558.).

¹⁵¹“中国实业志（山西省）[Chinese Industrial Annals (Shanxi Province)]”, in Huang, *Archival materials of the Shanxi piaohao*, p. 560.

The above illustration has shown that the Shanxi piaohao declined after the 1910s, before ending this chapter a last question needs to be answered: after the closing of the piaohao, what became of its shareholders? Did they transfer their fortunes to other businesses or did they decline with the piaohao? Compiled from their descendants' reminiscences, Table 6-8 shows the fates of these piaohao owners.

Table 6-8: Subsequent lives of the piaohao shareholders

Shareholder's surname	Piaohao they invested	Ending
Li	Ri Sheng Chang	Went bankrupt in 1911.
Hou	Wei Tai Hou Wei Feng Hou Tian Cheng Heng Xin Tai Hou Wei Sheng Chang	Opened a printing factory and a weaving mill after 1911 but bankrupted later.
Mao	Wei Chang Hou Wei Tai Hou	The whole family addicted to opium and went bankrupt after 1911.
Ji	Qian Sheng Heng	Went bankrupt in 1911.
Wang	Xie Tong Qing Xie He Qing	Successor Wang Qishi addicted to opium and bankrupted after 1911.
Chang	Da De Yu	Opened two weaving mills and invested in the Shuangfu Match Firm.
Qu	San Jin Yuan Chang Sheng Chuan Bai Chuan Tong	Invested in the Shuangfu Match Firm.
Qiao	Da De Tong Da De Heng	Invested in the Shuangfu Match Firm and ran tea and grain shops in northwest China.

Sources: ‘平遥县志[Pingyao County Annals]’, ‘李兰泽墓志铭 [Epitaph of Li Lanze]’, ‘侯怀奇, 侯承文回忆整理 [Reminiscence of Hou Huaiqi and Hou Chengwen]’, ‘毛国玺口述整理 [Dictation of Mao Guoxi]’, ‘冀氏族谱 [Family Pedigree of Ji]’, ‘冀孔瑞回忆整理 [Reminiscence of Ji Kongrui]’, ‘王振邦口述整理 [Dictation of Wang Zhenbang]’, ‘常氏家乘 [Family Pedigree of Chang]’, ‘常国彪回忆整理 [Reminiscence of Chang Guobiao]’ (Huang, 2002a, pp.771-779.).

As shown in Table 6-8, eight families owned fifteen piaohao. After the piaohao business ended, five of them went bankrupt and three of them invested elsewhere, in the Shangfu Match Firm [shuangfu huochai gongsi 双福火柴公司] which had a paid-

up capital of 20,000 silver dollars when set up in 1920 and increased its capital tenfold after ten years.¹⁵² In contrast to the demise of the Shanxi piaohao, the foreign banks and Chinese modern banks rose as new financial powers in China and finally replaced the piaohao altogether (Cheng 2003).

6.5 Concluding remarks

Focusing on the impact of 1911 Revolution and the expansion of foreign and modern Chinese banks, this chapter explores the reasons for the Shanxi piaohao's decline. As it indicates, although the Shanxi piaohao survived a series of political disruptions, the 1911 Revolution impaired its business fundamentally due to the immense amount of looting, bad loans and continuous cash withdrawals. As the Shanxi piaohao approached bankruptcy, the foreign banks and modern Chinese banks gradually took over the lion's share with their greater capital power, more advanced business strategies, and more humane personal arrangements. Under these internal and external threats, investors in some piaohao declared themselves bankrupt, while other shareholders invested elsewhere and abandoned the piaohao.

¹⁵²“山西最早的民族工业创始人之一乔殿森 [Qiao Diansen - One of the founders of the Shanxi national industry]”<<http://www.tydao.com/jinshang/2012/120312qiaodiansen.htm>> (accessed: 2nd December 2015).

Chapter 7. Conclusion

7.1 Main findings

This dissertation has studied the Shanxi piaohao, one of the most important indigenous financial institutions in nineteenth century China. By an extensive use of primary sources, I developed a unique firm level set of data from which to examine the Shanxi piaohao's governance structure, business strategy and historical development.

Placing the Shanxi piaohao in a theoretical framework of the theory of the firm, I have found that in an environment with little power to protect shareholders' capital, the Shanxi piaohao developed a centralized vertical structure and collective punishment in its horizontal management structure to discipline their far-flung employees. Such a management structure lowered the cost of pursuing inconsistent objectives and successfully disciplined the banks for many years.

Besides sticks, the piaohao shareholders also provided carrots in the form of attractive incentive payments to employees. Through analysing the piaohao's income and pay structure, I have found the piaohao granted expertise shares to 20% to 30% of their employees; these paid the same dividends as the shareholders' capital shares. Once entitled to these shares, the employees' income increased by ten times and often to hundreds of times. Since these dividends were paid according to employees' performance and tenure as well as the piaohao's profitability, they at first were successful in motivating the employees.

The piaohao's management and incentive structure worked efficiently during its initial development and before any other similar financial institution had emerged. However, as with their expansion, the cost of working from poor information increased and the head office gradually reached its operating capacity. Moreover, from the late 1900s onwards, modern Chinese banks expanded and began competing with the piaohao for business and for experienced staff. The piaohao employees who anticipated the decline of their institution therefore moved to other banks for a more reliable source of income and a more humane work environment. It was in these circumstances that the piaohao's governance structure began to malfunction.

After addressing the piaohao's governance structure, this dissertation went on to examine the piaohao's business strategy, looking mainly at the determinants of its remittance fees. Using the RSC piaohao as a case study, I demonstrate that the Shanxi piaohao made local business conditions and safety its priority in deciding to set up a new branch. Throughout its development, its largest client group was always the 'firm'. To reduce the cost of amassing and transporting silver, the piaohao also designed four types of draft to balance the silver reserve in each branch. Moreover, in setting its fees, the piaohao took into account such factors as the amount of silver being remitted, the distance between the branches, the interval between the reception and the submission of silver, the type of client, type of draft, and ways of sending the draft in question.

In its examination of the historical changes in the piaohao's business, income and profits, this dissertation demonstrates quantitatively that the piaohao's government business occupied only 10% of its total business and refutes the claim that most of its business came from the Qing court (Chen 1937, Kong, 1984). Moreover, during its analyses, this dissertation also finds that, although the piaohao's business volumes and profits grew over time, a very high debt/asset ratio should have revealed extremely high financial risks before 1911 and rising expenses on human cost and remittance service fees also weakened their profitability.

The piaohao lived through a series of political disruptions. The 1911 Revolution, however, not only brought to an end China's last feudal dynasty but also drove most of the piaohao out of the market. By examining the piaohao's losses during the 1911 Revolution, I have found that incessant looting, bad loans, and withdrawals fundamentally impaired its business base. As the Shanxi piaohao suffered in this way from the revolution, the foreign banks and modern Chinese banks developed and encroached on the piaohao's business. Although the Shanxi piaohao sought help from the government, its hope was dimmed by its lack of connection with the newly established regime. It was in this situation that the investors in some piaohao declared themselves bankrupt after the 1910s, while other shareholders invested elsewhere and the piaohao had to close.

7.2 Contributions and future work

My thesis contributes to the existing literature in the following ways. First, by digitizing the substantial primary sources, my thesis provides considerable quantitatively detailed data on the Shanxi piaohao. It not only fills the data void where this subject is concerned, but also empowers the present study to offer in-depth and comprehensive analyses and allows us to make comparisons with China and the rest of the world as regards banking and finance.

Second, by combining economic models with historical evidence, this study provides an interesting case study on economic theories. For example, the path dependence model enabled me to trace the origin of the Shanxi piaohao as a sequence of reactive decisions, and the principal-agent model and tournament model allowed me to scrutinize the underlying functioning of the piaohao's governance structure. All these new findings provide new interpretations of the piaohao's rise and decline.

Besides this, this dissertation also tackles important but long unsolved questions on the piaohao's business strategy, such as the determinants of its remittance fees and the identity of its clients. These findings are crucial for us to understand how the piaohao developed its business despite the turbulent context. Moreover, for the first time, my work estimates the historical changes in the piaohao's business volumes, incomes and profits. It not only provides scholarship with a new view of the growth and decline of the Shanxi piaohao, but also corrects scholarly misunderstandings of the piaohao, i.e. its relationship with the government.

Finally, by contrasting the decline of the Shanxi piaohao and expansion of the modern Chinese banks and foreign banks, my study reveals the differences between the indigenous and exogenous financial institutions in China and touches on the big question of the great divergence between China and the West.

It is at the same time necessary to critique the limitations of this thesis. One lingering question I would like to pursue is that of the domestic remittances paid by the foreign, official, and private banks in China. Although I have illustrated some of the quantities handled by these banks and examined their paid-up capital, the limited data have prevented this dissertation from further analysing these banks' Chinese domestic

remittances, which are critical to understanding the piaohao's decline. Another intriguing question that I would like to examine, once data became available, is the market structure of the Chinese remittances business. This dissertation has shown the Shanxi piaohao as a whole played an important role in the Chinese remittance market, but questions such as how much of the market it occupied, whether it had a monopoly or not, what its relationship was to other financial institutions and what its internal relationships were like are also important and require much deeper inquiry.

On top of this, as most of the estimations in this thesis were made from the data of one Shanxi piaohao, some may contain errors. These defects will be remedied as soon as I replenish the data set. To conclude, although my work has identified some similarities and differences between the Shanxi piaohao and contemporary modern banks, a more stimulating research project would be to compare the Shanxi piaohao with one of the latter banks, to shed light on the debate about the great divergence from a comparative perspective.

Appendix A

Table: Shanxi piaohao's government remittances and loans to the government, 1862-1911 (Tls. 1,000)

Year	Capital funds	Assistant funds	Imperial household expense	Western movement funds	Copper Silver	Foreign loans	Other funds	Sum	Advanced by Shanxi piaohao
1862	100	0	0	0	0	0	0	100	0
1863	140	0	0	0	0	0	0	140	0
1864	562	0	0	0	0	0	0	562	100
1865	1,279	80	79	0	0	0	0	1,438	92
1866	2,351	0	35	0	0	0	0	2,386	156
1867	4,128	0	394	0	0	0	0	4,523	0
1869	2,766	30	110	0	0	0	0	2,906	0
1870	371	0	130	0	0	0	0	501	0
1871	145	20	0	0	0	0	0	165	0
1872	2,831	90	96	0	0	0	0	3,018	35
1873	1,550	118	122	0	0	0	0	1,791	151
1874	100	0	0	0	0	0	0	100	0
1875	4,578	325	479	0	190	0	0	5,572	0
1876	3,836	958	118	30	0	0	0	4,942	0
1877	2,334	448	0	124	0	0	0	2,906	871
1878	21	0	0	0	0	0	0	21	0
1879	1,790	10	110	15	0	183	20	2,128	677
1880	2,959	756	0	765	10	306	13	4,809	1,361
1881	2,400	678	100	60	20	67	163	3,488	782
1882	1,425	354	0	117	10	40	0	1,946	603

1883	2,214	552	0	279	30	0	0	3,075	0
1884	243	26	0	20	0	6	0	295	896
1885	2,831	307	121	0	0	0	0	3,259	1,307
1886	2,796	506	100	466	0	224	0	4,092	0
1887	104	30	0	45	0	0	0	179	0
1888	6	50	0	120	0	0	0	176	0
1889	1,518	1,080	243	404	120	124	0	3,490	80
1890	3,294	2,397	91	578	80	0	0	6,440	1,446
1891	2,901	825	131	180	0	280	17	4,334	946
1892	3,133	467	166	415	0	21	17	4,218	1,600
1893	2,660	1,428	82	999	0	26	58	5,254	737
1894	960	88	10	478	110	0	15	1,661	0
1895	4,217	2,180	517	372	140	0	100	7,526	460
1896	3,727	1,929	70	100	26	38	12	5,902	1,193
1898	1,866	901	65	52	20	35	0	2,939	145
1899	2,888	557	360	110	35	6,782	0	10,732	1,172
1900	2,428	1,082	31	0	0	105	0	3,646	464
1901	155	87	0	10	0	4,646	0	4,897	0
1902	747	1,001	174	0	0	8,321	0	10,244	581
1903	1,309	1,404	0	0	0	8,309	13	11,035	217
1904	1,416	866	52	80	68	1,911	11	4,404	0
1905	2,896	1,562	236	90	194	14,943	469	20,390	210
1906	3,625	1,300	315	0	50	17,174	113	22,576	29
1907	583	100	0	0	10	12,951	31	13,675	0
1908	1,493	197	154	135	13	8,120	189	10,302	360
1909	161	140	0	60	0	2,031	175	2,568	0
1910	667	82	10	3	0	3,222	66	4,049	0

1911	177	0	151	0	0	4,975	28	5,331	0
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Source: Statistics and memorandums to the throne collected in Shanxi Piaohao Archival Materials (Huang, 2002a pp.74-138.).

Note: By examining official memorandums, I have found that Huang's statistic has following errors (Huang, 2002a pp.74-138.): In 1879, his estimation omitted that the piaohao remitted Tls. 10,000 'Self-strengthening Movement' funds in Sichuan province (Huang, 2002a p.85.). Moreover, when calculating sums of governmental remittance volumes, he made sum errors in 1880, 1881, 1882, 1883, 1909, 1910, and 1911. All these mistakes have been amended in this dissertation.

Appendix B

Table: Sample data for remittance fees

Date	Destination	Client	Type	Draft	Amount (Tls)	Duration (Day)	Distance (km)	Remittance fees (Tls)
12/01/1850	Hekou	de sheng shi	firm	direct original	3,000	100	1,649	0
12/01/1850	Hekou	he sheng yong	firm	direct original	2,000	100	1,649	0
12/01/1850	Hekou	yong xing yu	firm	direct original	300	40	1,649	0
19/01/1850	Hekou	heng yi cheng	firm	direct original	1,500	100	1,649	4
19/01/1850	Suzhou	heng yi chang	firm	direct original	2,000	80	1,569	2
19/01/1850	Suzhou	wan sheng long	firm	direct original	1,000	60	1,569	3
19/01/1850	Suzhou	wan sheng long	firm	direct loan	2,000	30	1,569	2
19/01/1850	Hekou	da de chang	firm	direct original	4,000	100	1,649	0
06/05/1851	Qixian	hao zhi xiong	gentry	direct original	325	9	629	0
06/05/1851	Hankou	fu sheng xun	firm	inverse loan	2,500	210	1,386	30
06/05/1851	Hankou	fu sheng xun	firm	inverse loan	2,500	240	1,386	30
09/05/1851	Taigu	wan sheng long	firm	direct original	306	85	825	0
09/05/1851	Qixian	wan sheng long	firm	direct original	153	35	629	0
09/05/1851	Lanzhou	xin sheng kui	firm	inverse loan	2,500	70	1,480	0
10/05/1851	Taigu	yi he xing	firm	direct original	5,000	26	825	10
13/05/1851	Beijing	li xiansheng	gentry	direct original	500	60	206	1
13/05/1851	Beijing	li xiansheng	gentry	direct loan	3,000	60	206	7
13/05/1851	Qixian	qian yu kui	firm	direct original	7,000	90	629	0

Source: Huang (2002a, pp.833-1100.)

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