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# WHY AND HOW DID SILVER DOMINATE ACROSS EURASIA LATE-13<sup>TH</sup> THROUGH MID-14<sup>TH</sup> CENTURY? HISTORICAL BACKGROUNDS OF THE SILVER BARS UNEARTHED FROM ORHEIUL VECHI

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*Keywords:* silver, China, appanages, tributes, Orheiul Vechi, Kipchap Khanate.

## 1. Introduction

The Mongolian regime, for the first time throughout human history, built a bridge connecting different monetary systems beyond civilizations each of which had kept own monetary system until late 13<sup>th</sup> century. Until the mid-13<sup>th</sup> century, there was no commonly accepted unit of exchange even in the upper level markets across Eurasia. Following the collapse of the Roman Empire, where gold, silver and bronze had circulated, Western European minting came to depend exclusively on silver. East Mediterranean which included the Byzantine world continuing the Roman system, West Asia and South Asia used both precious metals and non-precious materials as currencies. Although there were a variety of local preference, in West Asia, basically, silver worked as most popular monetary account and currency. Importantly, however, with the name of silver unit, dirham, various types of silver-copper alloy and silver-coated copper popularly circulated as late as mid-13<sup>th</sup> century. Continuing debasement of silver under ‘silver famine’ which numismatists call caused some regions to revive gold as monetary unit in West Asia.

In the eastern part of the Eurasia, however, the use of silver as currency and monetary unit was quite limited. Chinese dynasties had almost never produced silver coinage, depending instead on copper coinage for local exchange and silk for interregional transfer. Silver ingots were used only as a supplement to silk. Surrounding countries followed Chinese practice, and East Turkestan documents strongly suggest that both taxation and commerce in the region were conducted in terms of cloth or copper coins<sup>1</sup>.

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<sup>1</sup> For Europe see Spufford 1988; for China – Kuroda 2008b; for central Asia – Moriyasu 2004. I use the term copper coin instead of bronze coin to avoid the confusion of referring to Chinese coinage as bronze prior to the mid-16<sup>th</sup> century and brass (as used in the *jiaqing tongbao*) after that point.

Many societies in the 13<sup>th</sup> century used goods as their principle units of exchange, like Novgorod relying on fur as we will see later. Especially, certain grains or cloths commonly served for transactions in local markets. For example, the twelfth-century islanders of Rügen, off the coast of Germany, used linens as currency (Sargent, Velde 2002, 11). 13<sup>th</sup>-century peasants in Xiuzhou (Jiaxing) county, China, brought rice to a market town, Weitang-zhen, to exchange for salt or oil (Fang Hui 1971, 698).

In the last quarter of the 13<sup>th</sup> century, however, use of silver abruptly became common across the entire Eurasian landmass. The circulation of silver continued to increase during the first half of 14<sup>th</sup> century when silver appears to have been far more abundant than it would become in the 15<sup>th</sup> century. In conjunction with the increased circulation of silver across Eurasia during this period, taxation came increasingly to be collected in silver as well.

In the 1570s silver from Potosí began to circulate literally around the globe. It has been argued that the global spread of precious metals in the 16<sup>th</sup> century should be seen as an epoch heralding the rise of the capitalist world. Unlike the late 16<sup>th</sup> silver boom in which silver circulated physically, the pan-Eurasian growth in the popularity of silver that began in the late 13<sup>th</sup> century was based instead on its function as a common unit of account even as real silver did not circulate widely. Even if so, the rise of silver in Eurasia during the height of Mongol empire paved the way for the global rise of silver three centuries later.

## 2. Before the Eurasian Silver Century: Silver as A Substitute of Silk

At the end of the 19<sup>th</sup> century, a cached of uncoined Chinese-style silver was unearthed from the remains of medieval Brandenburg. The dates on the European coins found together with the silver suggest that it may have been left there as

late as the end of the 11<sup>th</sup> century<sup>2</sup>. If this silver were truly of Chinese origin, what circumstances brought it to eastern Germany? We must look earlier than the Mongol invasions of Europe of the early 13<sup>th</sup> century.

Without understanding the monetary role played by silk we cannot understand the function of silver in the eastern part of Eurasia during the ancient and medieval periods. Since the establishment of a currency system based on copper cash, which was convenient for daily business but too bulky for large scale trade, during the Western Han, there had been a need for a complementary currency suitable to long distance transport. Gold worked as a currency for high value transactions at first, but it did not hold its position for long. Instead, beginning after the fall of the Eastern Han, it was silk that played the principal role in transferring tax revenues from local authorities to the central government. Until the Tang period, silk continued to serve as the most important instrument for bulk transactions. As one example, agrarian dynasties often obtained horses, which were a military necessity for Chinese states, from nomads in exchange for silk (Kuroda 2008b)<sup>3</sup>.

Silver began to take over silk's monetary role to a limited extent during the Tang. It was in the Northern Song period, however, when silver clearly took on a role as more than an ornamental item. During the Northern Song, silver ingots (*sycee*) were cast at a higher frequency than in previous periods, suggesting that silver had become a more popular form of currency than ever before. One clue to the amount of silver production during the Northern Song is the amount of silver tribute from silver mining districts. In 1075, 411,420 *liang* (about 16 metric tons) were collected across the Song dynasty, and the peak likely came at the end of the 11<sup>th</sup> century, when a single silver mine, Baorui, near Fuzhou, recorded 440,000 *liang* of silver tribute. Silver tribute is believed to represent only one fifth of total production, meaning that Baorui likely produced 2.2 million *liang* of silver that year (Wang Lingling 2005, 27-28, 59-60).

The 11<sup>th</sup> century silver mining boom happened in conjunction with an increase in the minting of

copper cash. During the Yuanfeng period (1078-1085), the Song state issued 6 million guan (6 billion wen) of copper cash every year, the largest quantity of copper cash minted at any point in Chinese history. The high frequency of Yuanfeng coins found in hoards from this period offers further support to evidence from the written records of the activities of the imperial mints. Copper mines active in this period generally also produced silver ore, though the reverse was not true, which, in conjunction with the fact that there was no minting of silver at this time, suggests that the increased production of silver in the Northern Song was not planned, but rather a by-product of the increased minting of copper cash. Casting 6 million guan of copper cash requires 12,000 metric tons of copper, so even if copper ore was just one thousandth part silver, it would have meant the production of 12 metric tons of silver as a by-product. Though published in the late 16<sup>th</sup> century, *Tiangong Kaiwu*, a scientific encyclopaedia, described copper ore as containing silver, suggesting that silver was seen as a by-product of copper production (Song Yingxing 1978, 356).

Although silver mines were mostly located in southern China, a significant quantity of silver made its way to the north and west. Along with the horse-silk trade, the power of northern nomadic dynasties relative to the Song led to streams of silver flowing north. The treaty of Shanyan between the Liao and the Song in 1004 resulted in annual tribute payments of 200,000 bolts of silk and 100,000 *liang* of silver from the Song to the Liao. In a similar treaty between the Xixia and the Song, the Qingli treaty of 1044, the Song promised to make annual payments of 50,000 *liang* of silver, 130,000 bolts of silk and 20,000 *jin* of tea to the Xixia. This means that, all told, on an annual basis, 6 metric tons of silver would have been sent to the two nomadic dynasties in the mid-11<sup>th</sup> century.

We cannot be sure of the origin of the Chinese-style silver ingots unearthed in Brandenburg mentioned at the beginning of this section. But it is impossible to completely deny the possibility that some ingots from among the Song's 6 metric ton silver tribute could have made their way to eastern Germany.

As background, we should note the difference between China and Europe in terms of the demand

<sup>2</sup> Silver lumps were found in small linen bags as seen in late 19<sup>th</sup> century China (Friedel 1896, 5).

<sup>3</sup> As for complementarity among currencies, see Kuroda 2008a.

for silver. As described above, in spite of the increasing production of silver beginning in the 8<sup>th</sup> century, silver was rarely used as money in China proper prior to the 12<sup>th</sup> century. In contrast, Europe, especially north of the Alps, had depended exclusively on silver coinage since the collapse of the Roman Empire, and in both taxation and large commercial transactions, silver coin was the dominant medium. Thus, generally speaking, in the early 2<sup>nd</sup> millennium, the western end of Eurasia had stronger demand for silver than did the eastern end.

However, we should must also note that it is difficult for a metallic coin to be useful for all kind of transactions. As in China, where a single type of currency, copper cash, was used to conduct all transactions, a single type of coin, the silver denarius, dominated in medieval Europe. The big difference was the value of each coin. Roughly speaking, a silver coin was 100 times as valuable as a copper one, as the typical Chinese exchange rate of one silver *liang* for one thousand wen of copper cash suggests. Thus, the denarius was too valuable to be used for every day transactions (Spufford 1988, 238) and, in their daily lives, most Europeans depended on cloths and grains as units of exchange, with silver serving only as a unit of account.

Northern China under the Jin, the state which the Mongol Yuan would eventually replace, was the first state in Chinese history to use silver as a unit of account. However, introducing silver as the unit of account did not mean that silver was actually much used either for collecting taxes or making purchases. At the start of the dynasty, the Jin did not have much copper cash in circulation and so, like the Southern Song, its neighbour and rival, it issued paper currency denominated in terms of copper cash. Unlike the Song, the Jin did issue coined silver, but it failed to establish silver in circulation and soon discontinued its use. Silver worked in tandem with silk as the main medium for tax payments, and there was even paper money denominated in terms of silk issued during the transition between the Jin and the Yuan (Abe 1972, 98). From this, we can see that in the eastern half of Eurasia, during the 11<sup>th</sup> through 13<sup>th</sup> centuries, silver function merely as an auxiliary to silk, a fact that will prove necessary to understand patterns in the use of silver ingots explained in section 5.

Although significant quantities of Chinese silver might already have been moving along Eurasian trade routes, payment in silver was far from common until the late 13<sup>th</sup> century, when circumstance changed drastically.

### **3. The Emergence and Collapse of the Eurasian Silver Century**

In the last quarter of the 13<sup>th</sup> century silver suddenly became affluent across Eurasia. In Tunis, silver became cheaper than gold in 1278, a fall in silver price that seems to have occurred at the same time as a similar shift in Genoa (Spufford 1988, 178-179). Egypt seems to have emerged from a period of silver shortage at this time. A hoard from Moldavia, Prajesi, contained silver Golden Horde coins from the last two decades of 13<sup>th</sup> century as well as Byzantine gold coins (Boldureanu 2007; Watson 1967, 18). In Caucasian hoards from the 13<sup>th</sup> century through the 14<sup>th</sup> century, silver is dominant, while in other periods only gold coinage from Byzantium is found. Under the Ilkhanate, silver output appears to have increased beginning in the 1280s (Martinez 1984, 155). A clearer change of the currencies appeared in the quality rather than the quantity in West Asia in which coinages in silver unit, dirham, had been dominant. Silver coins of higher finesses with whiter appearance rapidly substituted lower finesses ones in black in the late 13<sup>th</sup> century. In the case of Transoxania the transformation was distinct. The governor Masud Beg banned silver coated copper dirham in 1271-72, thereafter the standard of high fineness (80%) for silver dirham established. There was an increase in the number of silver mints in the 1280's (Davidovich, Dani 1998, 406). The Delhi sultans began to issue silver rupees on a large scale in 1295 (Deyell 1983, 209). Documents unearthed from East Turkestan reveal that, during the latter half of the 13<sup>th</sup> century, the most common form of payment shifted dramatically away from cloth and copper coins and towards silver (Moriyasu 2004). The official history of Korea described the circulation of uncoined silver beginning in 1287, following another Mongol expedition to the peninsula (Jeon Rinji 1972, 736-739). None of these localized changes is conclusive on its own, but taken as a whole, they suggest that silver usage became popular across Eurasia in the late 13<sup>th</sup> century. This shift originated in China Proper.

There is an important difference between the use of coined silver and the use of uncoined silver, the

value of which was determined by weight. Beginning at its establishment, the Mongol issued silver coins, which can be confirmed from archaeological remains (Whaley 2001, 52). The usage of coined silver was continued by the western khanates in later periods (Wang, Zhong 2007, 16, 23). The Mongol thus stand in stark contrast to other Chinese dynasties, most of which had been reluctant to issue silver coins and instead used silver only by weight. However, the conquest of the Southern Song led the Yuan to deviate from its initial policy toward silver. In 1276, the capture of the Lower Yangzi, the most prosperous region of China, where Hangzhou, the capital of the Southern Song was located, must have brought the Yuan court a large amount of confiscated silver ingots. The Yuan minister Dayan is said to have ordered that the bags of soldiers be searched for silver to be taken for the use of emperor Khubilai (Tao Zongyi 1959, 377).

The year 1276 was a turning point, when a set of institutions built on taxation in terms of paper money helped bring about the continental-wide circulation of silver. From 1263 to 1311 (except for 1284 through 1287), the Yuan prohibited the use of silver in private commerce, though nobles were allowed to use it in both commerce and religious activities. For this monopolization of the use of precious metal to have succeeded, the 1282 policy of registering gold and silver craftsman must have been effective, though it is impossible to imagine that there were none left unregistered (Vogel 2013, 162).

The conclusion of this silver age can be defined precisely. At the end of the 1350s, anti-Yuan rebels occupied the core region of the Lower Yangzi, which provided a large quantity of grain to Beijing and produced silk and porcelain for export (Maeda 1973, 75). Already at this time, after several decades of stability, the value of paper money had begun to fall sharply. Copper coins, which had been formally abandoned, came back into use, with their value in relation to paper money varying by locality within the Lower Yangzi region (Kong Qi 1987, 25). Silver would retreat from use in China for more than half a century, until the 1436 Ming introduction of silver taxation, called *jinhuyin*.

In Bengal, the issuance of silver rupees stagnated after the 1360s, and Delhi also began to suffer from the scarcity of silver in the late 14<sup>th</sup> centu-

ry. In 1359, the basic unit of silver in Aden was decreased in weight (Shamrookh 1996, 304); in the 1360s, Egypt fell into a silver shortage severe enough to force it to switch to reliance on minted copper. In this period, then, the Aegean Sea region appears to have relied predominately on copper alloy coinage with little silver available. Given that prior to 1350, as Pegolotti has noted, there were a number of types of silver coins in circulation in Cyprus, the rapid retreat of silver in Greece during the second half of the 14<sup>th</sup> century appears to share a cause with the shift in currency availability in Egypt mentioned above (Grierson 1979, XI, 491). In Caffa the inferiority of the *aspers*, a type of silver coin, produced after 1380 caused local authorities to mark coins from later than that date with a special stamp (Di Cosmo 2005, 415). Italian cities appeared to experience an outflow of silver on account of the Levant trade, and the minting of silver in London decreased sharply<sup>4</sup>.

Thus, the Eurasian continent appears to have undergone a shared and sudden collapse in the availability of silver after 1360, and silver would not be found in abundance again through the end of the 15<sup>th</sup> century.

The emergence and disappearance of silver abundance across Eurasia that I have described above occurred synchronically. During the late 13<sup>th</sup> century, with a lag of several years after the widespread issuance of paper money by the Yuan, there was a large surge in the output of minted silver in London. During the mid-14<sup>th</sup> century, the peak of silver rupee issuance by the sultans of Bengal was followed by the London mint, once again with several years delay (Kuroda 2009, 253-54).

One possible bit of evidence is that silver of Chinese origin may have contained more antimony, allowing us to track where it was circulating, but this possibility remains to be examined scientifically (Blake 1937, 328). A mechanism operating behind the scenes under the Mongol regime helped to increase the silver usage across the Eurasian continent.

<sup>4</sup>On Egypt (Bacharach 1983). Allen estimates that silver circulation in England fell from between £700,000 and £900,000 in 1351 to between £150,000 and £200,000 in 1422 (Allen 2001, 607).

#### 4. Institutional Setting Happened to Create Commensurability

What the Mongols did in organising taxation at Samarkand soon after the conquest suggested their principle in building administration. They kept the existing exchange system (merchants made businesses in terms of gold, while people depended on copper base currencies) and imposed taxes respectively in gold on merchants and in copper coinage on commoners (Kolbas 2006, 68). The policy must have resulted from Chinggis Qan's considerations of the advice of local Muslims who were "skilful in the laws and customs of cities" (Allsen 2001a, 5). However, importantly, they introduced taxation in terms of silver against the Mongols and their trade circuits. Prevailing a common universal unit across empire accompanied with a practical flexibility of keeping existing local systems with some modifications in order to interface with a universal system.

Here we should pay attention to the unified system of measurement applied to the postal relay system across the entirety of the Mongol world, from the Korean peninsula to Eastern Europe, a system which supported the commensurability of various local currencies. Because it crossed a variety of administrative regions, the postal relay system should have used a single set of measurement units, to avoid substantial differences from station to station in the amounts of grain and liquor supplied to messengers. The standard established under Ögedei Khan was that a certain amount of grain and wine should be provided to messengers stopping at postal relay stations (Matsui 2004, *passim*). A main purpose of the requisitions called *qubchir* was to support the postal relay system across the entire Mongolian Empire. Thus, even if local variations in measurement remained in local markets, there should have been a standard measurement system across the entire Mongol empire for use in official business that crossed regional administrative boundaries, as the postal relay system did.

The major difference between developments under the Yuan and in the western khanates is that, while silverization in taxation was accompanied by actual payment in paper money under the Yuan, the western khanates did not issue paper money, and so should have collected taxes in real silver. The Ilkhanate had tried to introduce a pa-

per money system in 1294, but in vain.<sup>5</sup> This contrast in currency systems affected cross-regional trade. Typically, Italian merchants brought linen to Sarai or Urjench, which they exchanged for silver, specifically the *somo* silver ingots of the Golden Horde khanate, and then advanced to Hangzhou where they converted silver for paper money with which they could purchase silk and porcelain, a process described by Pegolotti (Lopez, Raymond 1955, 358). Visitors from Europe, including Marco Polo, unanimously concurred in noting that paper money circulated stably in China. Yet, we must ask, where did the silver used in Sarai or Urjench come from?

One apparent evidence of westward silver flow is the remittance of tribute from estates in China Proper called *touxia* to the western khanates. Since their occupation of northern China and Jin defeat, the Mongol had allotted estates to their princes and nobles that they could use to raise horses and collect labour and grain. After making empire-wide census in 1257, Mongke apportioned lands among nobles across Eurasia. Subsequently, the Mongol khans shared their estates across their proper territories. The Yuan possessed its appanages in Iran, as western Khanates kept theirs in China. As Hulegu sent tribute to Mongke, the cross possession among Mongol khans must have enhanced silver transfers in distance (Martinez 2011, 93). In the stage of Mongke era, however, the system bring few significant change to economy. However, the incorporation of Southern China hoarding numerous silver ingots in the *touxia* system after 1276 happened to ignite unprecedented silver march. The late 13<sup>th</sup> century through the mid-14<sup>th</sup> century was the only period during which nomad lords based in northern and central Asia could have directly collected revenues from estates in wealthy southern China.

There are a few cases concretely demonstrating that tribute was brought from these Chinese estates to the western khanates. For example, in 1281, a tribute called *wuhusi* was sent from an estate in Taiyuan, Shanxi, controlled by the Yongning King, to Bishbalik, Turkistan (Muraoka 2002,

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<sup>5</sup>The use of metal currencies was prohibited in the same way as under the Yuan. The compulsory use of paper money, called *Chao*, led to the stop of trade in the Ilkhanate so that after two months the Ilkhanate had to abolish this policy (Makhdumi 1988, 52-53). This year the output of silver decreased (Martinez 1984, 165).

158, 160)<sup>6</sup>. This was the same year in which the postal relay system was extended from Bishbalik to the Caucasus regions. It is perhaps not coincidental that there many *touxia* were established that year. Only in 1281 the Yuan made fiefs of 1,048,107 households in Southern China.

The first peak of establishments of fiefs in Southern China begging in 1276 must result from the conquest of Southern Song territory. The establishment of new fiefs suspended between 1285 and 1298. The resumption of new establishments might have been influenced by an easier situation of transfer in distance due to the ending of Batu's rebellion against the Yuan. More importantly, not only the newly established *touxia* but also the resumption of transfer through existing *touxia* channel might have caused the second surges of silver minting in West Eurasia. Ghazan of Ilkhanate dispatched envoys with gifts to the Yuan in 1297-98 and they returned with silk stuffs which were collected from Hulegu's holdings in China (Allen 2011a, 49-50). Coin specimens in museums show that Ilkhanate silver minting had a sudden peak around 1300 (Martinez 1995-1997, 153).

Besides the two peaks of establishing new fiefs, as far as the Golden Horde was concerned, with a high possibility, the tribute transfers through *touxia* system appeared to resume in 1339 after a previous suspension. The khanate had apportioned territories in Pingyang, Jinzhou and Yongzhou in China. The history of Yuan wrote that, from 1339, 2400 *ding* in *zhongtongchao* (paper money) was given to the Golden Horde annually (Song 1976, 2906). The amount is equivalent to 2300kg in silver. In 2007, a pot containing 65 silver bars was excavated from Orheiul Vechi, a fortress town of the Golden Horde. The pot is thought to be left between 1340 and 1360 (Boldureanu 2007). The bars had two features showing Chinese connections. One is the weights. They were apparently moulded around 200 grams, equivalent to five *liang*, and one tenth weight of silver *yuanbao*. They must be the silver bars called *somo* by contemporaries. Another is the bubbled surfaces which appear to be similar with the popular appearance of Chinese silver ingots as we touch later<sup>7</sup>. The excavation strongly dem-

onstrates that the tribute in silver from China surely reached the Golden Horde.

Thus, there were two silver flows crossing Eurasia under Mongol rule. Some silver moved east, to China Proper, to be used to buy silk, porcelain and other commodities. This silver was converted to paper money as soon as it arrived. Flowing west, some silver may have been used to purchase goods from the western side of Eurasia, like horses and cobalt, the trade in which is described below. However, main westward stream of silver was not used for purchasing goods, but rather resulted from the remittance of taxes collected at *touxia* estates located in China Proper, but owned by western khanates.

Important is that a contrast emerged between the monetary systems of the western khanates and the Yuan due to the proliferation of paper money in China Proper during the late 1270s<sup>8</sup>. Two different currencies denominated in terms of silver became common: silver coinage like the *somo* in the western khanates and paper money like the *zhongtong chao* in the Yuan. As long as paper currency in terms of silver could substitute for silver itself in the eastern part of the Mongol domains, it was inevitable that silver would be sucked toward the western part through any channel, whether remittance or investment.

Importantly, unprecedented scale of tribute transfers through *touxia* channels was made by transporting silver bars of large denominations. They were quite of different functions from silver coinages previously circulated such as dirham and denarius. Unlike silver coins available to both of interregional settlements and local transactions, silver bars such as *somo* worked exclusively for distant exchange. Through affluent movements of silver bars across the Eurasia, for the first time, humans had a unit of account for interregional settlement prevailing far beyond the boundary of civilization.

Here we should remember that in Central Asia silver-coated copper coins dominated until the 1270's. The Chagatai Khanate had also minted them, but them and high fineness silver increased issuance in the 1280's after Masud Beg banned silver-coated copper coins. The silver bars exca-

<sup>6</sup> In 1283 the office for issuing paper money was located there (Maeda 1973, 77).

<sup>7</sup> Thanks to Dr Ana Boldureanu, the author could examine and weigh 65 silver bars at the National History Museum of Moldavia on 21<sup>st</sup> September 2016.

<sup>8</sup> In Turkestan, paper money began to circulate during the Yuan occupation of 1280-1287. Before and after this period, though, paper money was not in use (Maeda 1973, 77-78).

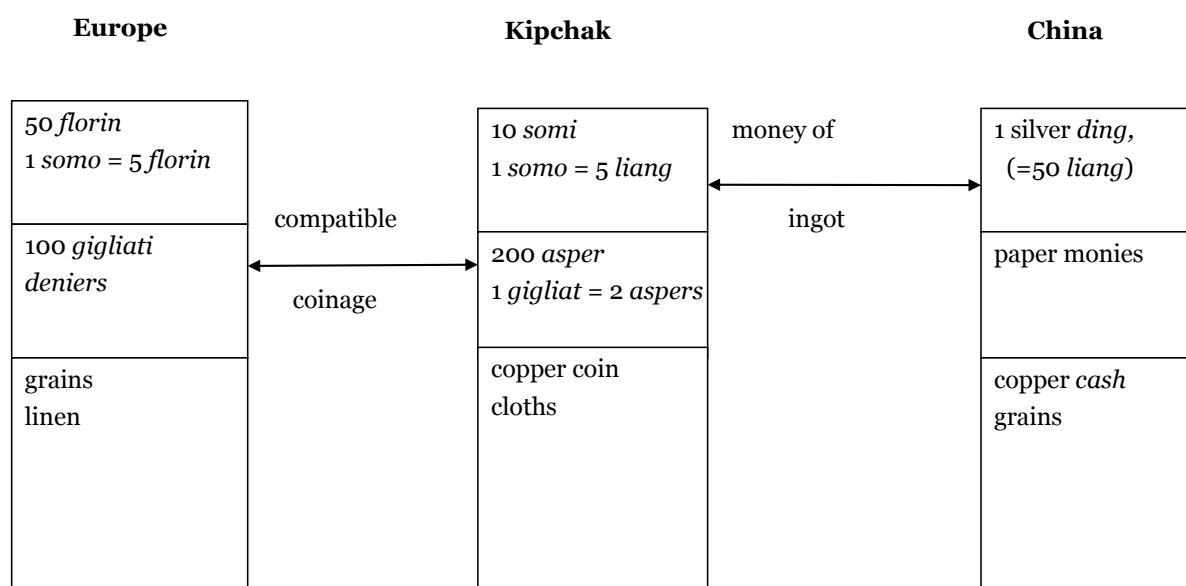


Fig. 1. Multiple Strata of Monies.

vated from Orheiul Vechi are of high fineness and have full of small halls on surface. The bubble like surface is the way for proving purity and the way Chinese silver moulders continued to make from the 8<sup>th</sup> century to early 20<sup>th</sup> century. Importantly, a silver bar in possession of the British Museum, which is thought *grivna* from 14<sup>th</sup> century Novgorod, has bubble-like small halls on surface as same as the silver bars from Orheiul Vechi. Thus, we can assume that sudden affluent silver supplies caused Central Asia, in which silver-coated copper were circulating, to adopt the bubbled surface silver bars in order to prove purity.

Silver bars called *grivna* had already existed in the Kievan Russia. However, when the tribute that Novgorod paid to the Golden Horde shifted from fur to silver, the *grivna* became popular (Martin 1978, 406). *Grivna* was the original form of the Ruble, a term derived from the word *rubit* (“to cut”), which designated a silver bar. It might not be just accident that two *grivna* from Novgorod possessed by the British Museum appear to be cut almost half a weight of *somo*.

Considering that, as the confiscation records shown, silver bars worked as the most popular form as liquid wealth in Bruges until the late 14<sup>th</sup> century, when it was replaced by gold among Italian merchants, *somo* might have acted as a protagonist in the silverization of the western part of

Eurasia. We should note that the German Hanse trade monopolies connected trade in Novgorod with fur trade in Bruges (Ogilvie 2011, 97)<sup>9</sup>.

Consequently, in the first half of the 14<sup>th</sup> century, moving from west to east across Eurasia there was a chain of commensurable currencies: the gold *florin* or large silver *gross* in Western Europe, the silver *somo* in the western khanates, and the silver *yuanbao* (counted by *ding*) in China Proper. Five *florins* were equivalent to one *somo*. The gold coin reappeared in Western Europe for the first time after the collapse of the Western Roman Empire and was part of this chain. It actually began to circulate as early as the 1340s when the third peak of silver coinage started as well<sup>10</sup>. Increasing issuance of large size silver coinages in the eastern-end Mediterranean having held gold usages might have created the condition that gold could be sold easier to Western Europe<sup>11</sup>. Meanwhile, ten *somi* were equivalent to one silver *ding*. Thus, along a major route of interregional trade from Western Europe to the Korean peninsula, there was a set of currencies that could be converted easily (Figure 1).

<sup>9</sup> See also Abu-Lukhud 1989.

<sup>10</sup> Gold became significant in Bruges, the financial centre of medieval Europe, only after 1340 (Murray 2005, 295-296).

<sup>11</sup> The Rupenid mint at Cilicia purchased foreign silver for more gold than local exchange rate (Martinez 1995-1997, 226-227).

Again, a silver bar of 200 grams worked quite differently from a silver coin of around 3 gram such as dirham. It was convenient for a long distant trader dealing in large scale trade in valuable goods, but was far from practical for the daily transactions of ordinary people. In lower level markets, as we will see in the next section, there were many different local currencies in circulation.

We have already seen that, in the eastern part of Eurasia, the real silver was not much used. Transactions were so dependent on paper money, especially in Northern China, that the prices were often given in terms of *zhongtong chao*. Paper money was used to pay for taxes denominated in terms of silver and was exchanged with silver bars brought to China by merchants from the west. When paper money fell out of use in China Proper, the institutional setting in which silver bars moved widely along Eurasian trade routes collapse, a process that took place in the 1360s.

The Royal Mint in London maintained annual records of silver coinage. Large peaks in the issuance of silver currency appeared in 1278-88, 1300-14, and 1344-55. The quantity of silver minted annually in this period was larger than in any other period prior to the Napoleonic wars (Spufford 1988, 204-205). All three peaks of silver mintage in Europe from the late 13<sup>th</sup> century to the mid-14<sup>th</sup> century overlapped with the peaks of remittance from *touxia*.

### 5. Markets Stratified

As mentioned in the preceding section, at the highest levels of transcontinental trade, uncoined silver was the main unit of exchange. The *luanbao* ingots of China Proper and its surrounding regions and the *somo*, a silver bar, from the region stretching from Turkestan to Eastern Europe, both seem to have circulated widely. However, the weight of silver contained in these unminted forms was not identical.

The weight of 65 silver bars unearthed from remains dating to between 1340 and 1360 at Orheiul Vechi in Moldavia ranges from 173 to 227 grams<sup>12</sup>. The weights appear to be distributed around 200 grams, but the variance is rather large. Similar variance is found in the case of *luanbao* ingots,

distributed around a mean weight of 50 *liang*<sup>13</sup>. The irregular distribution of weight among 72 silver ingots found in the 10<sup>th</sup> century Intan shipwreck near Java suggests that uncoined silver had never circulated in ingots of uniform weight in China (Flecker 2002, 84-85).

Silver had originally been a substitute for silk in the east. Few would worry about small differences in length or weight of a bolt of silk when making a transaction. Similarly, neither the *luanbao* in the east nor the *somo* in the west was defined by any precise standard. Unlike transactions conducted according to the fixed measures adopted by mercantile states in later periods, economic activities under the Mongol regime did not depend on intrinsic properties of silver. Rather silver served primarily in a conceptual role as the unit of account.

The conceptual function of silver as unit of account was the basis of currency commensurability across the continent and developed in tandem with the creation of a division between currency used for interregional settlement and that which was used in local transactions. Even if we can confirm that late 13<sup>th</sup> century bills of exchange could be used to enable transactions between some cities, like Genoa and Tabriz (Moshenskyi 2008, 197), across western Eurasia the *somo* must have played a significant role as a means of bridging the gap between different local currencies. At the same time, this sort of link did not mean that prices converged across different local markets connected to each other through silver-denominated trade. The connections between local markets were quite loose connection and prices of most goods moved independently in different places.

According to a late version of Russian Law one *grivna* was paid for annual wage of one female labourer with one daughter (Vernadsky 1953, 126). The *grivna* must have been inappropriate to mediate the exchange in the market place which was, typically, held on Fridays and in which farmers brought their produce for sale (Vernadsky 1953, 117). Fractions of *grivna* were known as *nogata* and *rezana*: there were 20 *nogata* and 50 *rezana* in one *grivna*. The lowest unit was known as *veksha* (literally, “squirrel”); in Smolensk one

<sup>12</sup> The hoard is preserved at the National History Museum of Moldavia, Inventory number 24875 (1-65).

<sup>13</sup> The weights of silver ingot with the inscription of 50 *liang* made under the Yuan show substantial variation (Vogel 2013, 482-484). This is in striking contrast to four ingots from the same county, Jurong, moulded in the same year 1277, which differed in weight by only three grams.



*nogata* was equal to 24 *veksha* (Vernadsky 1953, 122). To facilitate the exchanges of peasant products in the market places, small currencies of furs (or low fineness silver as fur's substitutes) whose value was sufficiently fractional like *veksha* must be indispensable.

In the Golden Horde khanate, a type of silver coin called the *tamga* was already in wide circulation, with one *somo* theoretically equivalent to 120 *tamga*. As mentioned above, in the Golden Horde and Chagatai khanates, *tamga* was also the name of the commercial tax. The term was also used to refer to customs taxes in Anatolia under the Ilkhanate, suggesting that the same type of silver coin – the *tamga* – might have been used across western Eurasia (Köprülü 1992, 67).

Novgorod had *den'gi*, a subunit of the *grivna*. With one *grivna* worth 100 *den'gi*, silver coins with inscriptions from the late 13<sup>th</sup> century, found in the Chagatai khanate and weighing 1.8–2.0 grams (almost half a *gigliate*, or one twentieth of a *liang*) may have been seen as equivalent to *den'gi*, rather than to the *tamga* (Wang, Zhong 2007, 17–18). The silver coins must have been minted after the reformation by Masud Beg which unified the weight at 2.1 grams (Davidovich, Dani 1998, 406).

In the case of Tana on the Sea of Azov, the *somo* was used to purchase goods in long-distance trade, while the mint used the silver from a single *somo* to coin about 200 *aspers* for local use. A Genoese statute of 1304 treated the Golden Horde *asper* as equivalent to ten Genoese *deniers*. The Byzantine *folleri*, a copper coin valued at one-16<sup>th</sup> of an *asper*, was used to purchase vegetables and small items for daily use (Wang, Zhong 2007, 17–18; Lopez, Raymond 1955, 356; Yule 1914, 159).

As the case of Tana demonstrates, commercial exchange tended to be divided into three layers, each with its own distinctive currency. Uncoined silver like the *somo* was used at the top layer to conduct interregional trade. A local mint would issue silver coins, like the *asper*, made from melted-down ingots, for local uses like tax payments. Meanwhile, even the smallest denominations of silver coins were still too valuable to be used by most people in daily life, and so various coins made of other metals, like the copper *folleri*, were used in most small transactions. The three currencies thus worked in concert to handle all levels

of commerce; their relationship was not substitutive but complementary.

Multiple layers of commercial activity, with various currencies in use, appeared across Eurasia during the Mongol period. In Yuan territory, paper money appeared to circulate commonly, as required by regulation. However, a lower layer of transactions still existed, making use of several local currencies. As mentioned above, copper coins continued to play a significant role in former Southern Song territories in towns across Central and West Asia, while in Yunnan, *cowries*, shell money from the Maldives, were more important for local commerce. Meanwhile, in regions like northern China, with no available currency of small enough value to be used in daily life, various monetary substitutes including wooden tablets and wrapping paper provided by merchants served to supplement official paper money. In addition to these examples, in rural areas, grain continued to be used as currency.

## **6. Conclusion. The Importance of the Silver Bars from Orheiul Vechi**

Monetary system in pre-industrial ages was an association of means of exchange for lower-level (or local) market and upper-level (or interregional) market. Two monies worked independently, since there are significant differences between proximate exchanges and distant exchanges in size, frequency, and seasonality of transactions<sup>14</sup>. The Mongolian regime did not seriously affect the lower level markets, but its empire-wide tribute transfers with a unified system of measurement happened to build a commensurability in distant exchanges, and subsequently invited a series of global transformations of entire exchange systems in later period.

The 65 silver bars which were found from Orheiul Vechi prove that, through transfer system, silvers of large denomination surely moved across Eurasia mid-14<sup>th</sup> century and synchronised economic activities from the Korean peninsula to London.

## **Acknowledgement**

This research is supported by the Japan Society of Promotion of Science (project no. 26285073) and the Lavex, École Normale Supérieure, Paris, 2016.

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<sup>14</sup> The horizontal dichotomy between monetised urban and self-sufficient rural makes us blind from the vertical multiplicity of exchanges and the complementarity among monies (Kuroda 2008a).

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## **De ce și cum argintul a dominat în Eurasia de la sfârșitul secolului XIII până la mijlocul secolului XIV? Istoria lingourilor de argint descoperite la Orheiul Vechi**

*Cuvinte-cheie:* argint, China, teritorii supuse, tribut, Orheiul Vechi, hanatul Kypceak.

*Rezumat:* Noile descoperiri monetare, asociate cu informații referitoare la circulația monetară din Asia Centrală și de Vest, confirmă ipoteza că o mare parte a lingourilor de argint de proveniență chinezească ajungeau până în părțile de vest ale Eurasiei, inclusiv până la Londra, în anii 1280, 1300 și 1350. Cele trei apogee de emiteră a monedelor de argint la Londra coincid cu introducerea sau reluarea plăților tributului din teritoriile chinezești supuse, numit *touchia* 投下, către hanatele mongole de vest. Descoperirile monetare din Transoxania și Iran confirmă că după anul 1270 monedele din argint de calitate proastă și cele din cupru argintate, sunt înlocuite cu monede din argint calitativ. Forma și greutatea celor 65 de lingouri de argint de la Orheiul Vechi (Republica Moldova) mărturisesc în mod vădit că tributul plătit în argint, venit din teritoriile supuse din China, ajungeau neapărat în hanatul Kypceak. Regimul mongol n-a avut o influență importantă asupra piețelor de nivel inferior, însă sistemul de taxare și dislocare a tributului pe scara întregului imperiu, cu un sistem unic de măsură, a condus la comensurabilitate în cazul schimburilor îndepărtate, apoi și la un șir de modificări globale ale unor sisteme de schimb în perioadele ulterioare.

## **Почему и как серебро господствовало в Евразии с конца XIII до середины XIV века? История серебряных слитков, обнаруженных в Старом Орхее**

*Ключевые слова:* серебро, Китай, зависимые территории, дань, Старый Орхей, Кыпчакское ханство.

*Резюме:* Новые нумизматические находки, наряду с имеющимися сведениями о монетах средневековой Центральной и Западной Азии, подкрепляют предположение о том, что большое количество серебряных слитков китайского происхождения достигало западной части Евразии, до Лондона, около 1280, 1300 и 1350 годов. Три пика выпуска серебряных монет в Лондоне совпадают с установлением или возобновлением выплаты дани из зависимых китайских территорий, *touchia* 投下, западным монгольским ханствам. Нумизматические находки из Трансоксании и Ирана свидетельствуют, что после 1270-х годов монеты из низкопробного серебра и посеребренной меди были заменены высокопробными серебряными монетами. Формы и массы 65 серебряных слитков, обнаруженных при раскопках памятников (1340-1360 гг.) в Старом Орхее (Молдова), явно свидетельствуют о том, что дань серебром из зависимых территорий в Китае, несомненно, попадала в крепость Кыпчакского ханства. Монгольский режим не оказал серьезного влияния на рынок более низкого уровня, но его система взимания и перемещения дани в масштабах всей империи, с единой системой мер, привела к соизмеримости при удаленных обменах, а затем и к ряду глобальных преобразований целых обменных систем в более поздний период.

21.04.2017

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