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# EASTERN AND WESTERN MONETARY SYSTEMS: FROM DIFFERENCE TO SIMILARITY

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*Resume: During the Ancient period and up to the modern era, the western and eastern monetary systems were completely different. The western one was based on the coin and the relationship between the coin and the unit of account. Currency was a privilege of the King and counterfeiting was punishable by a death sentence (boiling and hanging). Trade suffered from monetary instability and the monetary fragmentation that was a consequence of political fragmentation. The eastern system was mainly based on the important role of private issues of currency and the fiduciarity of the coins or of the banknotes. To this monetary stock were added drafts that increased the possibilities of trade. In both systems, the unit of account played an important role in giving homogeneity to a mainly heterogeneous monetary stock: they were characterized by diversity of currency and unity of the unit of account. The two systems reacted differently to the main economic crises, especially increases in the monetary stock and inflation.*

## 1. Short summary of European monetary history

As this document is primarily intended for Western readers, I will quickly and concisely provide an outline of European monetary history. References are generally to my *History of money*, published in 1995-6<sup>2</sup>.

### 1.1 Antiquity

The creation of coins was preceded by a long period when monetary instruments were metal objects. Thus in the texts of Homer, trade and evaluations were made of rods of iron or bronze.

The birth of coinage in the years around 625 BC was foremost the result of a decision of a king. It was an administrative creation and not the result of commercial developments.

From the beginning, the currencies used the most precious and important metals: gold and silver, often a mixture of both. The creation of money was not the result of a desire to facilitate daily small exchanges, but very significant trade, between kings or between rich notables.

The choice of metal was an important element in monetary history. Precious metal has always (it is a constant) been linked to the deities. Gold was the physical representation of the flesh of the gods and silver was a favourite metal of the

gods. It was to the gods that people offered gold and silver and temples retained reserves.

This is an important part of the history of money. This relationship between the metal and the sacred was the basis of legislation concerning currency and was a very significant point in the development of coinages.

Another point is also important, the relationship between the coin and its weight. Nearly all coins were struck and their individual weights were controlled. The system allowed verification and the checking of weights.

During the fifth century BC, war necessitated the development of monetary issues to pay soldiers and mercenaries, including weapons. The Greek cities that issued coins used the metal from the temples for striking increasingly large quantities of coins. To mark the sacred character of coinage and metal, they portrayed deities on the coins.

This initial confusion explains why counterfeiting was treated as a breach against the gods and why issues were engraved on one side of the coin with a divine figure. Note that this divine figure could be replaced by another sacred figure, the emperor or the king, or the personification of the state. In all cases, this was not the figure of a man, but of a holy man. In the Middle Ages, artists preferred to depict the Christian cross representing God.

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<sup>2</sup> Depeyrot, G., 1995-1996.

For a long time, coinage consisted of precious metal issues. Fractional issues occurred only later, when the entire society had been monetized, during the fourth century BC

In Greece the monetary system slowly developed in cities and between cities and colonies. The construction of colonies far from their founding cities was a factor in the dissemination of Greek coinage throughout the Mediterranean basin.

After the conquests of Alexander the Great, the arrival of gold and silver captured in Persia and estimated at 3,000 tons of silver, gave the Greek mints an opportunity to significantly increase their monetary production. These issues circulated in large quantities and enabled a shift from a nonmonetary economy to a monetary economy.

Thanks to the colonies, Greek monetary habits spread throughout the ancient world, both in the Mediterranean world and to the societies of Central and Northern Europe.

Finally, the incessant wars between peoples and between cities and empires forced people to recruit mercenaries who were paid in coins. Those mercenaries returned home and often imitated these gold and silver coins.

The growth of monetary stock in the fourth century BC led to increased issues of bronze coins.

Thus following the conquests of Alexander in the late fourth century BC, coins of gold, silver and bronze became common.

The conquest of Greece by Roman armies changed the situation. The booty taken by the Roman legions to Rome was, more or less, equal to the amount of silver and gold taken from Persia by Alexander the Great.

This very large amount of silver that gradually arrived in Rome, according to the rhythm of the tributes paid by the Greeks, gave the Roman mint the means to produce a very large number of silver coins which were used throughout the whole western world. Millions of denarii were produced and complemented by a very large quantity of copper coins.

During the Republic (3<sup>rd</sup> c. BC-1<sup>st</sup> c. BC), Rome took control of many nations and countries, and exported its monetary system. The consequences of the integration of all these conquered nations into the Roman Republic were a change towards an urban lifestyle and their integration into a monetary society. Coinage was necessary to pay for armies, administrators and for the collection of taxes.

With the creation of the Roman Empire, at the turn of the first centuries BC/AD, the monetary system was changed and unified, with a complete series of gold, silver and bronze coins. All these coins were linked by a fixed relationship of value.

Several mints were opened in the Empire and in the East, and existing mints continued to produce coins.

Several million coins were in circulation in the Roman world.

During the crisis of the 3<sup>rd</sup> century AD, the quantity of coins issued increased up to several million coins/year.

### ***1.2 Middle Ages and Modern period***

During the first part of the Early Medieval period, copper slowly disappeared. Gold, then silver coinage continued for some years and then disappeared.

After the end of the 7<sup>th</sup> century, the occasional issues were in silver. There were a lot of small mints producing very few coins. Silver coinage continued in various regions, but the development of society in the 11<sup>th</sup> – 12<sup>th</sup> c. needed large amounts of coined silver. At this time the outputs of the main mints increased and they once again obtained the status of really important coin producers.

The conquest of the Eastern Mediterranean Sea obliged kings and nations to change the monetary system, to reintroduce gold, which was used in the Islamic regions, and then to readopt coinage in good silver. In a few years between the 12<sup>th</sup> and the 13<sup>th</sup>, the economic world of Europe changed from a very Northern one to a Mediterranean one.

At the same time the development of trade made the development of a banking system necessary.

So the silver renaissance of the 12<sup>th</sup> c. was followed by a gold renaissance in the 13<sup>th</sup> and 14<sup>th</sup> centuries.

The 15<sup>th</sup> century was a period of gold and silver shortage. This "famine" continued up to the arrival of metal from the Americas.

So the 16<sup>th</sup> century was marked by an influx of gold, then by a huge influx of silver that spread throughout the world. After the end of the 16<sup>th</sup> century, Europe endured a new period of shortage linked on the one hand to a decrease in the supply of metal and on the other to large-scale exportation of silver to the Eastern regions.

However, the quantities available for the mints were so large that the mints adopted a new system of striking. The traditional one, with the hammer, was replaced by the system of the printing press.

Banks and banknotes soon appeared.

## 2. Summary of Chinese monetary history

### 2.1 Dynasty of the Western Zhou, 770 - 256 BC

During the first dynasties (Xia, 2070 BC to 1600 BC, Shang, 1600 BC to 1046 BC and Zhou, 1046 BC to 256 BC) there was no recorded monetary system, but with the Western Zhou dynasty, coinage of various kinds developed<sup>3</sup>.

The archaic period of the coinage is represented by spade coins. It can be linked to the Spring-Autumn Era and ended in 481 BC<sup>4</sup>. The free style Era was characterized by a variety of knife coins and spade money. It ran from circa 480 BC to 221 BC<sup>5</sup>. All the various kinds of coinage circulated together.

### 2.2 Qin Dynasty, 221 - 206 BC

Qin Shi Huang Di (221-207 BC) unified the country and the coinage<sup>6</sup>, and developed the administration. He is supposed to be the creator of a round copper coin with a hole in the center *ban liang qian* (half *liang* coin), about 8 grams<sup>7</sup>. Actually, the date of the first issues

seems to be close to 378 BC, as archaeological excavations seem to have proved. In any case, the Qin period is characterized by the extension of the coinage to the whole of China<sup>8</sup>. The coin kept this inscription even when its weight was later reduced.

During this period, coins were produced with a total absence of uniformity<sup>9</sup>. As far as the purity of the coinage is concerned, there is no way to establish any sort of standard<sup>10</sup>. In 186 BC, the weight was reduced to 8 *zhu*, and in 182 BC, a *wu fen* (5 parts) coin was issued - this is taken to be 5 parts of a *Ban Liang*, 2.4 *zhu*. In 175 BC, the weight was set at 4 *zhu*. Private minting was permitted, but with strict regulation of the weight and alloy.

There is a great variety of coins that are difficult to classify and to date exactly, especially those of unofficial or local manufacture.

### 2.3 Western Han Dynasty, 206 BC - 9 AD

The emperor Han Wu Di (118 BC) created a new copper coin, *wu zhu* that was used until the Sui dynasty (581-618)<sup>11</sup>. The weight of the coins was decreased<sup>12</sup>.

In around BC 100: the *wu zhu qian* (*wu zhu* coin) was produced at a rate of 500 million coins annually. At the same time, gold was used<sup>13</sup>.

This period was an important one for the development of the monetary economy<sup>14</sup>. Prior to Han, salaries were paid in grain or commodities. During the Han, salaries were paid in grain and commodities<sup>15</sup>.

Gold was used for imperial gifts and in large quantities. After the collapse of the Western Han, China only kept gold in the form of treasure and no longer as coin<sup>16</sup>.

<sup>8</sup> Peng, X., 1994, p. 41.

<sup>9</sup> Peng, X., 1994, p. 74.

<sup>10</sup> Peng, X., 1994, p. 78.

<sup>11</sup> Yu, L., Yu, H., 2004.

<sup>12</sup> Peng, X., 1994, p. 102.

<sup>13</sup> Kuroda, A., 2007, *Emancipate the Chinese Monetary History from the Aristotle Postulates*.

<sup>14</sup> It was the period of the first series of prices: on average, millet cost 75 cash and polished rice 140 cash per hectoliter, a horse 4,400-4,500 cash.

<sup>15</sup> Peng, X., 1994, p. 110.

<sup>16</sup> Kuroda, A., 2009, pp. 245-269.

<sup>3</sup> Peng, X., 1994, p. 23.

<sup>4</sup> Peng, X., 1994, p. 41.

<sup>5</sup> Peng, X., 1994, p. 41.

<sup>6</sup> Peng, X., 1994, p. 75.

<sup>7</sup> Yu, L., Yu, H., 2004.

Ruler	Amount of Gift (in jin - pound or catty-)
Gaozu	42,550
Emperor Hui	68
Emperor Gao	11,000
Emperor Wen	12,000
Emperor Jing	1,102
Emperor Wu	806,940
Emperor Zhao	2,420
Emperor Xuan	18,370
Emperor Yuan	540
Emperor Chen	3,660
Emperor Ai	680
Emperor Ping	200
Total	899,530

Table of Western Han gifts of gold<sup>17</sup>

#### 2.4 Xin Dynasty, 9 - 23, Eastern Han Dynasty, 25 – 220, Three Kingdoms, 220 - 265

The *wu zhu* coins continued to be minted. Wang Mang (9-23) tried to reintroduce knife money and other kinds of coins, but without success. However, this period was a period of disarray and different goods were used as money, such as cloth, silk, grain. In Sichuan, iron cash were produced.

During the Three Kingdoms period, monetary instability reflected the political instability, with small and token coins predominating.

The amount of coin given was significant, but decreased during this period.

Ruler	Amount of Gift	Annual average
W. Han	1,550,800,000	7,246,728
E. Han	531,200,000	2,724.102

Han-Jin gifts of coins<sup>18</sup>

#### 2.5 Western Jin Dynasty, 265 - 317, Eastern Jin Dynasty, 317 - 420

During the Western and Eastern *Jin* Dynasties, production seems to have stopped. In the south, coin production continued with many fluctuations in the weight of the coins. The Northern independent kingdoms (the Sixteen Kingdoms) issued some coins.

Ruler	Amount of Gift	Annual average
Jin	136,400,000	880,000

Han-Jin gifts of coins<sup>19</sup>

<sup>17</sup> Peng, X., 1994, p. 135.

<sup>18</sup> Peng, X., 1994, p. 214.

#### 2.6 North and South Dynasties, 420 – 589

The North and South Dynasties was another period of troubles. Many different coins were produced but the *wu zhu* was still issued. The general coinage was of a very poor quality. In 465, permission was granted for the people to mint coins.

#### 2.7 Sui Dynasty, 581 - 618

China was reunified under the Sui Dynasty (581-618). The only coin associated with the Sui is a *wu zhu* coin. Several mints worked in various regions. After 605, private coining again caused a deterioration of the coinage.

#### 2.8 Tang Dynasty, 618 - 907

The Tang inherited the tradition of money in the form of coins and cloth. The role of the natural economy was very great<sup>20</sup>. Silk was used as money<sup>21</sup>. Silver or gold was also used in ingots<sup>22</sup> or even as raw metal<sup>23</sup>.

Tang Gao Zu (618-626) replaced the *wu zhu* coin with the *kai yuan tong bao*, a copper coin of 2.5 cm, weighing 3.5 g and without any reference to the regnal year<sup>24</sup>. During this period, the copper of the coins was not standardized<sup>25</sup>, even if the usual percentage of copper was 85 %. Many private mints were active and produced light coins.

During the *tianbao* period (742-756) annual production was about 320,000 to 330,000 strings (320/330 million coins)<sup>26</sup>. This production decreased rapidly due to a shortage of copper; after 834 annual production was 100,000 strings a year. In 845, copper (bells, gongs, etc.) was taken from the Buddhist monasteries and transformed into coins.

Paper money was a way to avoid carrying heavy strings of coins<sup>27</sup>.

<sup>19</sup> Peng, X., 1994, p. 214.

<sup>20</sup> Peng, X., 1994, p. 246.

<sup>21</sup> Peng, X., 1994, p. 271.

<sup>22</sup> Peng, X., 1994, p. 278.

<sup>23</sup> Peng, X., 1994, p. 329.

<sup>24</sup> Yu, L., Yu, H., 2004.

<sup>25</sup> Peng, X., 1994, p. 256.

<sup>26</sup> Peng, X., 1994, p. 387.

<sup>27</sup> Peng, X., 1994, p. 329.

### 2.9 Five Dynasties and Ten Kingdoms, 907- 960

During the Five Dynasties and Ten Kingdoms, there was a shortage of coins due to the lack of copper. In 955, an Edict banned the holding of bronze utensils.

In the South, the mints continued to work and produce coins.

### 2.10 Northern Song Dynasty, 960 – 1127

The period of the Song dynasty is one of the most important in the history of China, with the first development of silver coinage. This evolution was important even taking into account the fact that China was divided into a great number of monetary districts and that the role of silver must not be exaggerated. Bronze currency was invariably used in local and daily transactions<sup>28</sup>.

Although bronze coin was the basis of the economy, the transition to a silver economy was underway by the time of the Mongol conquest of the Song in 1276<sup>29</sup>. However, during the Song period, China entered a period of development of monetary supply, bills of exchange, new forms of credit and paper money. This was the medieval economic revolution<sup>30</sup>.

#### 2.10.1 Bronze

The Southern Song limited the use of bronze cash to the Southeast and Sichuan. Paper money was used everywhere, but differed according to locality: there were up to 416 places with their own monetary units<sup>31</sup>.

In 996, Song cast 800,000 strings of bronze cash, far from the maximum output of 370,000 strings of cash during the Tang dynasty. By 1007, the output of the Song mints reached 1.83 million strings. In 1021, the court settled on a stable quota of 1.05 million strings<sup>32</sup>.

Copper production jumped from 4,580 tons annually in the 1060s to 9,606 tons in 1075<sup>33</sup>, while the output of coins quadrupled from

1.2/1.3 million strings to over 5,600,000 strings of copper coins per year<sup>34</sup>.

The minting of bronze coin reached its peak in the decade 1074-85, averaging 5.4 million *guan* (5.4 billion coins) per year; the highest level of bronze coin output in Chinese history. The total issue of bronze coin for the Northern Song period has been estimated at 262 million *guan*<sup>35</sup>.

During the *Yuanfeng* period (1078-85), about 140 to 150 million strings were minted and the total amount of coins could have been about 250-260 million strings by the end of the period<sup>36</sup>. The coins contained about 64 % copper, which was a decrease in comparison with the Tang dynasty.

Year	Annual quantity (strings of 1,000)
981	500,000
996	800,000
1000	1,250,000
1006	1,830,000
1016	1,250,000
1021	1,050,000
1030	1,000,000
1045	1,000,000
1050	1,460,000
1066	1,700,000
1077	3,730,000
1080	5,060,000
1106	2,840,000
1107-1111	2,900,000
1120	3,000,000

Table of Northern Song copper coin production<sup>37</sup>

#### 2.10.2 Iron

From a monetary point of view the Song Empire was fragmented. During the Song dynasty, copper and iron coins circulated at the same time<sup>38</sup>.

<sup>28</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>29</sup> Glahn, R. von, 1996, p. 48.

<sup>30</sup> Glahn, R. von, 1996, p. 48.

<sup>31</sup> Peng, X., 1994, p. 332.

<sup>32</sup> Glahn, R. von, 1996, p. 49.

<sup>33</sup> Glahn, R. von, 1996, p. 50.

<sup>34</sup> Peng, X., 1994, p. 335.

<sup>35</sup> Kuroda, A., 2007, *Emancipate the Chinese Monetary History from the Aristotle Postulates*.

Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>36</sup> Peng, X., 1994, p. 368.

<sup>37</sup> Peng, X., 1994, p. 387.

<sup>38</sup> Yu, L., Yu, H., 2004.

In 1005, four mints in Sichuan produced over 500,000 strings of iron coins a year. This declined to 210,000 strings by the beginning of the Qingli period (1041). At that time, the mints were ordered to cast 3 million strings of iron cash to meet military expenses in Shaanxi. However, by 1056, casting was down to 100,000 strings per year, and in 1059 minting was halted, leaving only an annual production of 30,000 strings. In the *Yuanfeng* period (1078-1085), about 1,139,234 strings of iron coins were produced per year<sup>39</sup>. Thereafter, output declined gradually.

The Southern Song limited the use of bronze cash to the Southeast and iron coins were used in Sichuan. Paper money was used everywhere, but differed by locality: there were up to 416 places with their own monetary units<sup>40</sup>.

### 2.10.3 Silver

The Song period was the apogee of the unified monetary system and the adoption of a silver standard prompted a shift from the copper coin to a silver economy. During the Song period the importance of silver grew enormously<sup>41</sup>. However, in the 12<sup>th</sup> c., silver constituted a minor proportion of state income. In the 1070s silver made up 7.3 % of income, gold 0.7 %, and coins 92 %<sup>42</sup>. The silver itself was evaluated in copper coins<sup>43</sup>.

Before the collapse of the Northern Song in 1127, its imperial store kept eight million bars of silver (about 200 million *liang*, or roughly 7,000 tons). This stock of silver was the result of their pursuit of copper: the Northern Song issued an astronomical number of copper coins and received a large amount of silver<sup>44</sup>.

This silver was the stock for payment of external Song expenses. The increased importance of the role of silver can be

explained by taxes that had to be paid to neighboring peoples and by the development of international trade paid in silver<sup>45</sup>. For example, the treaty of 1141 required the Song to pay 250,000 *liang* of silver and 250,00 bolts of silk each year<sup>46</sup>.

State expenditure in silver was largely devoted to the expenses of the imperial household, military expenses, and indemnities paid to rival states on the northern frontiers. In 1042, the Privy Purse disbursed one million *liang* of silver for military expenses<sup>47</sup>. A very large proportion of silver and gold was exported as tribute to the *Jin* or to the Arab countries<sup>48</sup>.

In the Song dynasty the value of silver rose to its maximum (1/3000+), but the ratio of gold to silver was low (1:10 to 1:12). It increased when the value of silver increased, up to 1:4-5<sup>49</sup>.

The importance of silver explains why the ratio of gold to silver was so favorable to silver in China. When, in the 10<sup>th</sup> century, the gold ratio was 1:11 to 1:12 in Europe, it was only 1:6.25 in China and 1:6 in Islamic countries<sup>50</sup>.

Year	Revenues in Silver	Expenditures in Silver
997	376,000	620,000
1021	883,900	580,000
1077	2,545,847	- <sup>51</sup>

Silver Revenues and Expenditures of the Northern Song State (all figures in *liang*)

In the Southern Song, the court paid salaries to its soldiers. These salaries were paid primarily in silver, though the soldiers typically had to convert silver into coins at exchange shops in order to obtain ready cash for everyday purchases<sup>52</sup>.

<sup>39</sup> Peng, X., 1994, p. 335.

<sup>40</sup> Peng, X., 1994, p. 332.

<sup>41</sup> Glahn, R. von, 1996, p. 9.

Peng, X., 1994, p. 332.

<sup>42</sup> Glahn, R. von, 1996, p. 55.

Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>43</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>44</sup> Kuroda, A., 2009, pp. 245–269.

<sup>45</sup> Peng, X., 1994, p. 359.

<sup>46</sup> Glahn, R. von, 1996, p. 52.

<sup>47</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>48</sup> Glahn, R. von, 1996, p. 54-55.

<sup>49</sup> Glahn, R. von, 1996, p. 114-115.

<sup>50</sup> Peng, X., 1994, p. 433.

<sup>51</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>52</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

### 2.10.4 Paper

The weight of the strings, especially in Sichuan, where iron coins had so low a purchasing power, explains the appearance of paper money in this region<sup>53</sup>.

In the 12<sup>th</sup> century, the Song produced a large amount of paper money to pay military expenses. During the Song/Jin war of 1206/08 the amount of *huizi* (paper money) was allowed to soar to 139 million *guan*<sup>54</sup>.

### 2.10.5 Japan

The Imperial Court of Japan ceased to mint copper in 958. Chinese copper coins were imported and commodities were used for exchanges<sup>55</sup>.

During the 12<sup>th</sup> and 13<sup>th</sup> centuries, coins also flowed out of China via maritime trade routes<sup>56</sup>.

## 2.11 Southern Song dynasty, 1127-1279

The continuing importance of precious metals in the Song fiscal administration after 1160 is also reflected in the substantial quantities of silver and gold held in state treasuries. An 1186 inventory of the holdings of the Treasury shows that its holdings of precious metals greatly exceeded those in coin<sup>57</sup>.

	Equivalent in Coin
Gold	31,680,000 <i>guan</i>
Silver	6,140,000 <i>guan</i>
Coin	5-6,000,000 <i>guan</i>
Total	42-43,740,000 <i>guan</i>

Holdings of the Reserve Depository of the Left Treasury, 1186<sup>58</sup>

	Equivalent in Coin
Coin	15,580,000 <i>guan</i>
Silver	9,670,000 <i>guan</i>
Gold	333,640 <i>guan</i>
Silk	3,780,000 <i>guan</i>
Total	30,000,000+ <i>guan</i>

State Disbursements for Military & Official Salaries, ca. 1174-89<sup>59</sup>

<sup>53</sup> Peng, X., 1994, p. 368.

<sup>54</sup> Glahn, R. von, 1996, p. 53.

<sup>55</sup> Miyamoto, M., Shikano, Y., 2003, p. 169-205.

<sup>56</sup> Glahn, R. von, 1996, p. 53.

<sup>57</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>58</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

### 2.11.1 Bronze

The function of bronze coinage in the Southern Song economy became fragmented into essentially discrete uses: in small quantities, bronze coins served as fractional currency for petty trade; in large quantities, they were "hoarded" as savings<sup>60</sup>.

Indeed, after 1160 bronze coin increasingly took on the attributes of "ghost money" in China. The classic example of "ghost money" is the Roman *libra* or "pound,"<sup>61</sup>.

### 2.11.2 Silver

The value of silver relative to bronze coin rose substantially in the twelfth century, doubling during the final decade of the Northern Song and then rising another 50% in the 1150s<sup>62</sup>.

The growing importance of silver in the Song monetary system is shown by the decision in 1189 to add a prohibition against the export of silver abroad to the existing ban on export of bronze coin<sup>63</sup>.

Unlike silver ingots from the Northern Song, which were inscribed with the names of officials, those from the late Southern Song mostly bear the inscriptions of private shops and individuals. In wealthy southern China, silver ingots were widely distributed but they did not extend far beyond the sphere of circulation of silk, which was also used as a kind of currency and to pay tribute. In addition to eight million *liang* of silver, the *Jin* found forty-five million bolts of silk among the treasure of the Northern Song. Silver ingots thus worked as a supplementary instrument for long-distance payment, and as a measure for storing wealth<sup>64</sup>.

<sup>59</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>60</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>61</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>62</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>63</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>64</sup> Kuroda, A., 2009, pp. 245-269.

### 2.11.3 Paper

Complaints about hoarding in the 1150s, became a key argument in favor of creating the new *huizi* paper currency in 1161<sup>65</sup>.

In 1168, the government adopted a new payment system for grain purchases made by the state in local markets: 56% of the purchases would be paid in *huizi*, 22% in bronze coin, and 22% in silver. In 1172, the formula for soldiers' pay was set at 20% bronze coin, 30% silver, and 50% *huizi* notes<sup>66</sup>.

In 1166-67, Emperor Xiaozong ordered the disbursement of 2,000,000 *liang* of silver to retire the initial issue of *huizi* notes in circulation. Before 1175 the Ministry had disbursed 4,000,000 *guan* of gold and silver in order to shore up the value of *huizi* by redeeming excess notes (and retiring one-third of the *huizi* notes). The emperor intended to halt further issues of *huizi* notes, which he had regarded as an emergency expediency, but by redeeming the notes with precious metals the emperor boosted popular confidence in their value. In response to this positive reaction in the marketplace, the court instituted the *huizi* currency on a permanent basis in 1170<sup>67</sup>.

During 1205-8, the renewal of hostilities with the *Jin* and the outbreak of civil war in Sichuan precipitated a severe fiscal crisis. By 1211, *huizi* were trading at half their face value<sup>68</sup>. Public confidence in paper money evaporated<sup>69</sup>.

## 2.12 Liao Dynasty, 916 – 1125, Jin Dynasty, 1115 – 1234, Yuan Dynasty, 1271 – 1368

### 2.12.1 Silver

Crucially, the Yuan dynasty did not mint coins but melted the silver that they collected into

<sup>65</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>66</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>67</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>68</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

<sup>69</sup> Glahn, Richard von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty".

ingots. The acquisition of a huge quantity of silver during the conquest of the Southern Song may thus have prompted the Yuan to abandon silver coinage forever<sup>70</sup>.

The Mongol great Khan Ögödei (1229-1241) reorganized the financial structure of taxation by requiring peoples to submit tribute in silver<sup>71</sup>.

However, the Mongols had conquered the Silk Road long before the 1270s, and were already collecting taxes in silver: military campaigns and political events also generated a flush of silver. Only the acquisition of stored silver from the Southern Song in 1276 and the development of the Burma trade route through military means in 1339, can explain surges of silver in the late thirteenth and mid fourteenth centuries. The direct causes of these sudden changes in the flow of silver must be kept distinct from underlying factors such as the Mongol peace<sup>72</sup>.

These abundant silver ingots could be more easily released for transport beyond Chinese territory and could circulate freely along Eurasian trade routes, as long as official paper monies were available in China<sup>73</sup>.

The consequence of this strong demand for silver was a decrease in the ratio of gold to silver from about 1:10 in 1100-1350 to 1:5 in about 1380-1450, and then a subsequent increase to about 1:10 after 1450<sup>74</sup>. This "decrease" was in fact an increase in the value of silver.

### 2.12.2 Paper

This period was the age of official paper monies (11<sup>th</sup>-14<sup>th</sup> centuries)<sup>75</sup>, as the major change was the issue of official paper currency<sup>76</sup>. Statistics in the official history of the Yuan show a steep increase in the issue of paper money in the latter half of the 1270s and according to contemporary memoirs, paper money became non-convertible at this time<sup>77</sup>.

<sup>70</sup> Kuroda, A., 2009, pp. 245–269.

<sup>71</sup> Glahn, R. von, 1996, p. 56.

<sup>72</sup> Kuroda, A., 2009, pp. 245–269.

<sup>73</sup> Kuroda, A., 2009, pp. 245–269.

<sup>74</sup> Glahn, R. von, 1996, p. 61.

<sup>75</sup> Kuroda, A., 2007.

<sup>76</sup> Peng, X., 1994, p. 471.

<sup>77</sup> Kuroda, A., 2009, pp. 245–269.

The issues of paper money represented about 7-10 million ingots/year, up to 36 million<sup>78</sup>. The use of paper money in China was noted in 1253 by Guillaume Rubruquis who came to China from Constantinople<sup>79</sup>.

In the 13<sup>th</sup> c. the Mongols continued the circulation of paper money, which circulated in a specific domain<sup>80</sup>.

The Yuan dynasty tried to supplement costly copper coins with a purely nominal form of money; state-issued paper certificates. The value of the issues of paper money was about 1 million *guan* from 1280 to 1330<sup>82</sup>. In the late Yuan Dynasty, the paper money system collapsed<sup>83</sup> and peasants began to produce their own coins.

## 2.13 Ming Dynasty, 1368 – 1644

### 2.13.1 Copper

The demand for small change increased after the closure of the imperial mints in the 1430s<sup>84</sup>. In fact, in 1430, silver became the mainstay of the fiscal system and predominated in private commerce. At the beginning of the Ming period, it was forbidden to use gold and silver for transactions; gold and silver could only be used to buy paper money. The monetary system was close to the Yuan system, with paper money; string were equivalent to 1,000 cash or 1 *tael*<sup>85</sup>.

The demand for small change was met by private entrepreneurs who minted their own coins. Counterfeited coins of poor quality were exported from China to Japan<sup>86</sup>.

The debasement of bronze coins occasioned a sharp rise in the nominal price of goods. In 1478 the ratio was 1:1,550 or even 1:1,300 copper coin for one *tael* of silver instead of the official price of 1:1,800<sup>87</sup>.

During the period 1478-1649, the exchange ratio of the coins differed according to the mint. Official coins were valued at a ratio double that of private ones. The size of issues was reduced and the market was dominated in the 16<sup>th</sup> century by counterfeited coins<sup>88</sup>.

China was the main provider of coins in the East and the long hiatus of issues during the Ming period (from 1436 to 1503) stopped the coin supply in the Eastern Asia. In 1503, the emperor reopened the mints<sup>89</sup>. This situation created a proliferation of counterfeited coins in the whole region. In Japan, there had been no issues since the 10<sup>th</sup> century, as Japan was

Mint	1628	1629	1630-1631	1631-1632
Beijing	129,489,984	145,144,444	145,144,444	-
Nanjing	?	?	365,994,353	345,105,017

Output of cast coins (wen)<sup>81</sup>

wholly dependent on the importation of cash from China<sup>90</sup>.

### 2.13.2 Silver

In 1430, silver became the mainstay of the Ming fiscal system and predominated in the private commerce<sup>91</sup>. The late Ming period was characterized by the development of silver<sup>92</sup>.

During the mid-Ming dynasty, silver became more and more abundant<sup>93</sup>.

This influx of silver coincided with an advance in the commercialization of China's economy<sup>94</sup>. The full flowering of silver was during the reign of the emperor Wanly (1572-1620)<sup>95</sup>.

There was an important disparity in the ratio of gold:silver between China and Japan. In China the ratio was 1:8 and in Japan it was only 1:13<sup>96</sup>. This facilitated the inflow of silver from Japan and from the Spanish dominions<sup>97</sup>.

After the 1530's, Japan became an exporter of silver and flooded the Asian market with the

<sup>78</sup> Peng, X., 1994, pp. 506 & 510.

<sup>79</sup> Peng, X., 1994, p. 474.

<sup>80</sup> Glahn, R. von, 1996, p. 57.

<sup>81</sup> Glahn, R. von, 1996, p. 192.

<sup>82</sup> Glahn, R. von, 1996, p. 62.

<sup>83</sup> Yu, L., Yu, H., 2004.

<sup>84</sup> Glahn, R. von, 1996, p. 84-85.

<sup>85</sup> Peng, X., 1994, p. 537.

<sup>86</sup> Glahn, R. von, 1996, p. 83.

<sup>87</sup> Glahn, R. von, 1996, p. 84-85.

<sup>88</sup> Glahn, R. von, 1996, p. 106-109.

<sup>89</sup> Glahn, R. von, 1996, p. 86-88.

<sup>90</sup> Glahn, R. von, 1996, p. 88-89.

<sup>91</sup> Glahn, R. von, 1996, p. 83.

<sup>92</sup> Kuroda, A., 2007.

<sup>93</sup> Yu, L., Yu, H., 2004.

<sup>94</sup> Glahn, R. von, 1996, p. 142.

<sup>95</sup> Glahn, R. von, 1996, p. 173.

<sup>96</sup> Miyamoto, M., Shikano, Y., 2003, p. 169-205.

<sup>97</sup> Glahn, R. von, 1996, p. 3.

products of its mines<sup>98</sup>. After the 1570s, the influx into China of silver from Japan was complemented by the arrival of silver from the New World<sup>99</sup>.

Flynn has suggested that the silver flowing into China via the European route probably amounted to 15,000 tons, while the amount of imports via the Mexico Manila route was some 13,000 tons<sup>100</sup>.

The influx of silver in the late Ming dynasty (perhaps about 200 to 250 tons per year in the first third of the seventeenth century) disturbed the traditional monetary system but accelerated the commercial development of China and the rise of the market economy<sup>101</sup>.

	Holland	Japan
1621-4	1,215,000	157,924
1628-32	1,240,000	-
1633-6	1,075,000	921,044
1637	1,000,000	3,029,550
1640-9	940,000	1,518,871
1650-9	840,000	1,315,121
1660-9	1,200,000	1,454,913
1670-9	979,500	1,154,148
1680-9	1,972,000	298,383
1690-9	2,691,000	228,952

The Dutch East India Company's importation of precious metals from Holland and Japan to Batavia (1621-99) (annual average in florins)<sup>102</sup>

	English East India Company	Dutch East India Company
1601-10	0,143	0,651
1611-20	0,588	1,019
1621-30	0,484	1,236
1631-40	0,452	0,850
1641-50	NA	0,920
1651-60	NA	0,840
1661-70	1,073	1,210
1671-80	3,053	1,129
1681-90	4,058	1,972
1691-1700	2,561	2,860
1701-10	4,276	3,927

<sup>98</sup> Glahn, R. von, 1996, p. 114-115.

<sup>99</sup> Glahn, R. von, 1996, p. 118.

<sup>100</sup> Miyamoto, M., Shikano, Y., 2003, p. 169-205.

<sup>101</sup> Glahn, R. von, 1996, p. 5.

<sup>102</sup> Prakash, O., 2004, p. 326-336.

1711-20	4,970	3,883
1721-30	6,513	6,603
1731-40	5,914	4,012
1741-50	7,236	3,827
1751-60	7,782	5,896
1761-70	NA	5,354
1771-80	NA	4,832
1781-90	NA	4,790
1791-94	NA	4,243

Annual average value of the treasure exported by the English and the Dutch East India Companies to Asia in 1601-1794 (in millions of florins)<sup>103</sup>

	Chinese ships	Portuguese ships
1586-90	15,975	-
1591-95	97,321	-
1595-1600	102,905	-
1601-05	128,243	-
1606-10	197,592	-
1611-15	114,232	-
1616-20	44,845	4,292
1621-25	12,943	14,323
1626-30	23,921	12,116
1631-35	21,709	24,721
1636-40	48,421	7,776
1641-45	26,090	13,525
Total	617,996	76,753

Estimate of Philippine exports to China (estimations in kg of silver)<sup>104</sup>

	Estimate in kg	annual average
1604-39	2,066,556	57,404
1640-45	362,053	60,343

Exports of silver from Japan (estimations in kg of silver)<sup>105</sup>

<sup>103</sup> Prakash, O., 2004, p. 326-336.

<sup>104</sup> Glahn, R. von, 1996, p. 124.

<sup>105</sup> Glahn, R. von, 1996, p. 136-137.

Source	Japan	New World/ Philippines	Indian Ocean	Total
1550-1600	1,190/1,370+	584+	380	2,154/2,334
1601-1645	2,432+	1,725	850	5,007
total	3,622/3,802+	2,309+	1,230	7,161/7,341

Estimate of Chinese imports of foreign silver (estimations in metric tons)<sup>106</sup>

Date	No. of ounces of silver for one ounce of gold
1368	5
1375	4
1385	5
1386	6
1395	5
1397	5
1407	5
1413	4.8
1426	7.5
1426	4
1431	6
1481	7
1502	9
1530	6
1534	6.3
1568	6
1572	8
1596	7.5
1620	8
1635	10
1635	13

Ming gold: silver exchange price ratio<sup>107</sup>

### 2.13.3 Paper

The Ming dynasty tried to supplement costly copper coins with a purely nominal form of money; state-issued paper certificates<sup>108</sup>.

The certificates (paper money) were also used as gifts for foreign exchange. In 1425, the tribute emissary from Ceylon was given 159,050 ingots worth of certificates. Later, the King of Manshujia came to China and was given a total of 500-600,000 strings of certificates<sup>109</sup>.

<sup>106</sup> Glahn, R. von, 1996, p. 140 (simplified).

<sup>107</sup> Peng, X., 1994, p. 607.

<sup>108</sup> Glahn, R. von, 1996, Berkeley, p. 1.

<sup>109</sup> Peng, X., 1994, p. 538.

The Ming and Qing periods were periods of parallel bimetallism in copper and silver<sup>110</sup>.

In 1425, paper money (*baochao*) circulated at 2% of its face value<sup>111</sup>.

	<i>Baochao</i>	Grain	Cloth	Silver	Total
1368-1375	-	-	-	2	2
1376-1385	5	-	-	-	5
1385-1395	9	-	-	-	9
1396-1405	8	15	-	6	29
1406-1415	9	-	1	-	6
1416-1425	11	2	2	-	15
1426-1435	1	5	11	1	18
1436-1445	-	3	1	8	12
1446-1455	-	3	2	12	17
1456-1500	-	1	-	51	52
Total	43	29	17	80	169

Means of payment in Huizhou land sale contracts<sup>112</sup>

In many regions of China during the 16<sup>th</sup> century, goods were used as money.<sup>113</sup>

There was an appeal to restore paper money in 1629<sup>114</sup>.

### 2.13.4 Japan

In Japan, there had been no domestic coinage since 958, except for a small issue in 1338. Coins were imported from China. During this period, gold dust, ingots and plates were used as money. During this period, the Japanese government shipped copper ingots to China in order to pay for the imports of Chinese coins that formed the main part of the Japanese coinage in circulation<sup>115</sup>.

<sup>110</sup> Glahn, R. von, 1996, p. 8.

<sup>111</sup> Glahn, R. von, 1996, p. 74.

<sup>112</sup> Glahn, R. von, 1996, p. 78.

<sup>113</sup> Glahn, R. von, 1996, p. 100, 102.

<sup>114</sup> Glahn, R. von, 1996, p. 197.

<sup>115</sup> Jacobs, N., Vermeule, C.C., 2009.

Expeditions were sent from Japan to try to obtain coins in exchange for goods and copper ingots. In 1433, 2.8 metric tons of copper were sent to China and in 1453, more than 90 metric tons. However, the Ming tried to limit the exportation of coins to Japan, by limiting the value of the coins to be exported. In 1433, instead of the 217,000 *guan* of coins that were the value of the cargo, the Ming allowed only 94,000 *guan* to be paid, of which 50,118 *guan* were in coins and the rest in *baochao*<sup>116</sup>.

In 1524, the emperor Jiajing legitimated the use of private coins on a different basis to official coins. Private coins were evaluated at 1:1400 to the *tael* compared to 1:1700 for official coins, but in 1527 private coins were again declared illegal<sup>117</sup>.

In fact, during the 16<sup>th</sup> c., copper coins imported from China circulated alongside local Japanese products of inferior quality<sup>118</sup>.

During the *Tensho Era* in Japan (1572-1592), the feudal lords began to strike gold and silver, but these coins were used more as presents than put into circulation<sup>119</sup>.

*Tokugawa Ieyasu*, the first shogun of the House of Tokugawa, decided after 1601 to unify the gold and silver currency in Japan. The unification of copper coins came later, after 1636, with a new coin close to those of China, the *Kan'ei Tsūhō*, which became the dominant medium for the small transactions<sup>120</sup>.

The monopoly on minting coins imposed by the Tokugawa government in Japan in 1601 and the subsequent placement of gold and silver under its supervision can be interpreted as measures to impose total control on the production and outflow of gold and silver<sup>121</sup>.

A characteristic of this period in Japan was the development of gold and silver coins. One of the reasons for this was the introduction of the ash-blowing technique imported from Korea in 1533<sup>122</sup>.

Period of coinage	Number of coins excavated at Japanese sites	Average no. of coins per year of coinage	Percentage of total
621-906	47,299	166	8.6
960-1003	31,341	712	5.7
1004-1053	150,428	3.009	27.2
1054-1101	253,764	5.287	46.0
1102-1130	20,621	711	3.7
1131-1200	2,864	41	0.5
1201-1252	3,851	73	0.7
1253-1279	1,295	50	0.2
1280-1367	292	3	0.0
1368-1407	10,631	266	1.9
1408-1436	29,799	993	5.4

Chinese coins excavated from Japanese sites<sup>123</sup>

	Hoards of the Ming period	excavations
Japanese	3	47,299
Shu	-	68
Jing	-	3
Tang	31,008	456
Zhou	-	72
Northern Song	292,098	456,086
Liao	-	6
Xia	-	5
Southern Song	928	8,065
Jin	-	1,016
Yuan	31	163
Han Chen Youliang	-	4
Ming	3,077	40,559
Korean	128	-
Other	729	-

Coins found in Japan<sup>124</sup>

### 2.14 Qing Dynasty, 1644 – 1912

The monetary system was one system based on copper and silver. Large transactions were paid in silver, smaller ones in copper. The price of an ounce of silver was maintained at 1,000 cash and the weight of the copper coins was adapted to match changes in the prices of silver. Large transactions were carried out in silver<sup>125</sup>.

The increasing necessity for coins required a constant increase in the quantity of money in

<sup>116</sup> Glahn, R. von, 1996, p. 90-91.

<sup>117</sup> Glahn, R. von, 1996, p. 96-97.

<sup>118</sup> Jacobs, N., Vermeule, C.C., 2009.

<sup>119</sup> Jacobs, N., Vermeule, C.C., 2009.

<sup>120</sup> Miyamoto, M., Shikano, Y., 2003, p. 169-205.

<sup>121</sup> Miyamoto, M., Shikano, Y., 2003, p. 169-205.

Jacobs, N., Vermeule, C.C., 2009.

<sup>122</sup> Miyamoto, M., Shikano, Y., 2003, p. 169-205.

<sup>123</sup> Glahn, R. von, 1996, p. 101.

<sup>124</sup> Peng, X., 1994, p. 542.

<sup>125</sup> Peng, X., 1994, p. 636.

circulation. At the same time, the cost of minting also increased. In 1576, the cost of the production of cash was estimated at 11 % of the value of the coins. At the beginning of the 18<sup>th</sup> century it was estimated at 22 %<sup>126</sup>.

In the 19<sup>th</sup> century, the mints decided to change to minting machines and in 1887, the government adopted machine-made coinage<sup>127</sup>.

#### 2.14.1 Copper

The increase in the importance of silver left a diminishing role for the copper coin.

This gave rise to reactions. In the middle of the seventeenth century, Huang Zongxi, a great Chinese Confucian, insisted on abolishing silver (and gold), or the use of copper cash alone. He thought that the use of silver enlarged the gap between rich and poor<sup>128</sup>.

However, daily transactions needed a lot of copper coins. The Qing immediately cast coins in the first months of their arrival in Beijing<sup>129</sup>. In 1647, the output was 1.7 billion coins, but in 1651 all the mints were closed<sup>130</sup>. Around 1760, Qianlong, annual production of coins was 3,000,000,000<sup>131</sup>.

In the sixteenth century, the prefect of Putian County banned the use of inferior copper coins. The petty traders and vendors who depended on daily transactions complained, since the proscription caused a hike in prices. During the course of the century, copper coins of varying quality circulated side by side, so some counties designated several copper coins for different usage. Some high quality coins were stored as assets, while other inferior ones were used in daily transactions<sup>132</sup>.

#### 2.14.2 Silver

The continuous flux of silver and gold in China continued. With the uncoined metal arrived

foreign silver dollars and other foreign coins<sup>133</sup>. These dollars were introduced at the very end of the 18<sup>th</sup> century and joined the American and European coins already in use in China since the beginning of that century<sup>134</sup>.

The development of the monetary economy increasingly included gold in transactions. In seventeenth-century Asia, the eastern part of Japan and temporarily, some sultanates in Indonesia such as Aceh, used gold<sup>135</sup>.

Period	Annual average of silver import (metric tons)	Index (1719/1806=100)
1719-25	15.2	32
1726-33	24.5	51
1734-40	25.7	54
1741-48	35.9	75
1749-55	56.6	119
1756-62	32.8	69
1763-69	72.3	152
1770-77	47.4	100
1778-84	33.1	69
1785-91	91.3	192
1792-98	42.9	90
1799-1806	92.4	194
Total	47.6	

European imports of silver into China, 1719-1806<sup>136</sup>

Period	Annual average of silver imports (metric tons)
1601-1605	147.6
1606-1610	340.3
1611-1615	415.0
1616-1620	355.6
1621-1625	305.2
1626-1630	259.2
1631-1635	436.0
1636-1640	572.8
1641-1645	248.6
1646-1650	187.7
1651-1655	184.2
1656-1660	302.5
1661-1665	330.8
1666-1670	82.4
1671-1675	105.9

<sup>126</sup> Peng, X., 1994, p. 660.

<sup>127</sup> Peng, X., 1994, p. 661.

<sup>128</sup> Kuroda, A., 2007, p. 45-49.

<sup>129</sup> Glahn, R. von, 1996, p. 208.

<sup>130</sup> Glahn, R. von, 1996, p. 209.

<sup>131</sup> Kuroda, A., 2007, Emancipate the Chinese Monetary History from the Aristotle Postulates.

<sup>132</sup> Kuroda, A., 2007, Emancipate the Chinese Monetary History from the Aristotle Postulates.

<sup>133</sup> Kuroda, A., 2007, Emancipate the Chinese Monetary History from the Aristotle Postulates.

<sup>134</sup> Peng, X., 1994, p. 668.

<sup>135</sup> Kuroda, A., 2009, pp. 245–269.

<sup>136</sup> Glahn, R. von, 2003, p. 187-205.

1676-1680	123.3
1681-1685	128.9
1686-1690	43.1
1691-1695	47.1
1696-1700	87.2

European imports of silver into China,  
1601-1700<sup>137</sup>

### 2.14.3 Paper

The monetary development of the economy was supported by the growing use of paper money. Private local paper notes were added to the supply of official ones<sup>138</sup>.

### 2.14.4 Japan

The monetary development of the economy also touched the other East Asian countries, which created or developed their monetary stock.

In Japan in 1695, the government reduced the gold and silver content of the currency for the first time; this decision is known as the *Genroku* re-coinage. This decision increased the monetary stock by 85 % whilst prices increased by only 15 %<sup>139</sup>.

## 2.15 Tables

Dynasties	Monetary facts
Western Zhou, 770 - 256 BC	Creation of currency (objects), followed by round coins (about 378 BC?).
Qin, 221 - 206 BC	Creation of round coins according to tradition (Qin Shi Huang Di, 221-207 BC). Reduction of the weight of the coins.
Western Han, 206 BC - 9 AD	Creation of the <i>wu zhu</i> coin. Large issues of coins, up to 500 million/year and development of the monetary economy Widespread use of gold for gifts.
Xin, 9 - 23, Eastern Han, 25 – 220 Three kingdoms, 220 - 265	Monetary reforms. <i>Wu zhu</i> coins continued to be minted. Period of political and monetary instability.
Western Jin, 265 - 317 Eastern Jin, 317 - 420	Instability in the South, with fluctuations of weights. No official production registered. <i>Wu zhu</i> coins continued to be minted? Local independent coinage in the North.
North and South, 420 – 589	<i>Wu zhu</i> coins continued to be minted. Development of local and private issues.
Sui Dynasty, 581 - 618	<i>Wu zhu</i> coins continue to be minted. Development of local and private issues.
Tang Dynasty, 618 - 907	The <i>wu zhu</i> coin was replaced by the <i>kai yuan tong bao</i> . Private production of low quality. In 742/56, production was at 320/330 million coins/yr. After 830s it reduced to 100 m/yr. due to a shortage of copper. Silver and gold used as money. Development of paper money to avoid transportation of coins.
Five Dynasties and Ten Kingdoms, 907 - 960	Lack of copper in the North. Mints still active in the South.
Northern Song, 960 – 1127	Development of silver, mainly for military and external purposes. Enormous production of copper, up to nearly 6 billion/year Production of more than 1 billion/yr of iron coins. The development of the coin economy needed the development of paper money, to avoid transportation problems.
Southern Song, 1127 - 1279	Continuous development of silver. The production of copper coins stopped. Development of paper money from the 1150s up to the collapse in the 1210s.

<sup>137</sup> Glahn, R. von, 1996, p. 232.

<sup>138</sup> Kuroda, A., 2007, *Emancipate the Chinese Monetary History from the Aristotle Postulates*.

<sup>139</sup> Miyamoto, M., Shikano, Y., 2003, p. 169-205.

Liao, 916 – 1125, Jin, 1115 – 1234, Yuan, 1271 – 1368	Continuous development of silver. Increase in the value of silver. Continuous development of paper money up to the end of the 14 <sup>th</sup> c.
Ming, 1368 – 1644	Continuous development of silver. Influx of silver from Japan and America. Decrease in the value of silver. Large issues of paper money, but replaced by silver. Decrease in the role of cash.
Qing, 1644 – 1912	Large issues of copper, but decrease in the role of cash. Continuous development of silver. Influx of silver from Japan and America. Arrival of quantities of silver coins from the Americas (dollars, etc.) or from Europe. Decrease in the value of silver vs gold. Large issues of paper money, but replaced by silver. Adoption of machines to strike coins.

Dynasties	Gold	Silver	Copper	Paper	
Western Zhou, 770 - 256 BC	Use as ingot	Use as ingot	Issues		
Qin, 221 - 206 BC			Very large issues		
Western Han, 206 BC - 9 AD			Very small issues		
Xin, 9 - 23, Eastern Han, 25 – 220 Three kingdoms, 220 - 265					
Western Jin, 265 - 317, Eastern Jin, 317 - 420					
North and South, 420 – 589					
Sui Dynasty, 581 - 618					
Tang Dynasty, 618 - 907				Large issues	Production
Five Dynasties and Ten Kingdoms, 907 - 960				Very small issues	
Northern Song, 960 – 1127 Southern Song, 1127 - 1279			Very large issues	Very large issues	Development
Liao, 916 – 1125, Jin, 1115 – 1234, Yuan, 1271 – 1368 Ming, 1368 – 1644					Very large issues
Qing, 1644 – 1912					
				Silver flow Very large issues	

### 3. Differences and similarities

#### 3.1 The question of precious coins and the unit of account

One of the main differences was that precious metal had been used as money since the very beginning of coinage in Europe. Gold coins were the first coins produced and issues of gold were completed by new coins in silver and in copper. The main issues gave priority to gold and silver. During times of war, gold and silver coins were produced in large quantities for the main commercial exchanges. Of course, in periods of peace, the metal was kept in Treasuries.

In Eastern Asia, the role of silver was reduced and limited. Silver, and sometimes, gold was preserved in the Treasury and used as ingots, as well as coin. This double use, as commodity and coin, differed from the European tradition. Of course, silk was never used in Europe as money. In some cases, grain could be used in a kind of barter system.

So in Europe, as far as the metal used in the coining process was concerned, the monetary system was top to bottom, whereas in the Orient the system was bottom to top.

One of the differences was also the relationship between the coin and the unit of account. In the systems of Antiquity, the relationship between the coin and the number of units was stable and public. In the case of an increase of prices, this relationship was able to destroy the monetary system: the cost of the minting of coins was greater than the cost of the metal.

The floating system of evaluation of coins in units of account appeared only after the end of the 16th century, when the amount of coins was so large that the standard relationship was impossible to maintain: the regular arrival of metal destabilized the value of the metal and so made any stability impossible.

This relationship units of account/coins obliged all parties involved in monetary stability to control every coin in circulation. Forgers had to be prosecuted and forgeries destroyed.

The stability of the relationship of units of account to coin was possible only because the coins were struck one by one with dies and not cast. If the coins had been cast, the variation of the weight of metal between the heaviest and the lightest would have been so significant that stability could not have been obtained.

The system of production of coins in China was different. The coins were mainly produced by casting. With such a system, the metallic value of each coin could not be preserved.

The dissociation between the unit of account and the coin made it possible to revalue the coins. The circulation of coins in strings diminished the potential impact of the weights of individual coins.

### **3.2 The question of paper money**

The question of banknotes (and notes in general) in Ancient Europe is a complex and difficult problem. Of course, the question of the absence of banknotes in Ancient times can find a trivial answer "there were no banknotes because there was no printing machine". The question and the answer are however more complicated and more difficult than at first glance.

#### **3.2.1 The place of the bank-note in the monetary system.**

Monetary systems are organized according to the importance of the sum and the level of anonymity of the transaction. In ancient societies, credit (whatever its form: draft, letter of exchange, debts, etc.) was not anonymous (as today). A transaction with credit required knowledge of the names of the seller and buyer, or at least the name of the person using credit to pay and the name of the person receiving the credit.

This local private credit was well attested from many testimonies, texts, etc. It concerned operations in the same village, or the same region. The credit linked two people whose names were known to each other.

Coinage was the one most commonly used during antiquity and the Middle Ages, up until the 19<sup>th</sup> century. The payment was immediate. Neither of the contractors needed to know the name of the other one.

A draft (whatever kind it may be) is means of payment that can concern large sums which may include credit. This method of payment requires knowledge of the identity of the two contractors.

Bank notes are a variant of coins, as they can be used for anonymous payments in the same way as coins. The sums can be large (larger than for coins), so this method of payment can be more convenient, when weight, etc., is taken into consideration.

#### **3.2.2 Composition of the monetary system (in general)**

We have no texts concerning the use of local private credit. However this local credit is and was so common in the countryside that it seems impossible to imagine an absence of small credit in the small villages or towns of Ancient Europe.

It is not necessary to detail the situation with coins: the issues were enormous (up to some millions per year). Every archaeological site produces coins and there are a considerable number of hoards. After the 5<sup>th</sup> c. B.C., we can consider that the economy was monetized, as coins were used in the evaluation of goods and services.

The existence of drafts is supposed but there are no surviving ancient drafts. The first ones are from the medieval period. There are no unambiguous texts concerning the use of drafts. However the existence of drafts can be deduced from some texts which can only be understood if we imagine the existence of drafts<sup>140</sup>.

There are no texts mentioning any kind of documents that could have been used as notes or bank-notes. There is no archaeological evidence either. There is no proof "*a silencio*". In this case, we can conclude that Ancient Europe did not know the bank-note (as a means of payment, a fiat money; non-metallic and anonymous).

There is some other evidence concerning the use of coins that is important for our topic. There are many inscriptions, texts, etc., concerning coin changers, whose occupation was to check coins and to change coins against different coins. They were able to receive deposits and to be involved in credit operations, particularly in the case of auctions<sup>141</sup>.

The documentation is more abundant for the Middle Ages and very important for the Modern period.

With the development of the main European Fairs, and long distance trade, it is clear that Europe created a complete network of bankers, mainly Italians, and that Italian banks

<sup>140</sup> On comptability systems in Rome, the best book is Minaud, G., 2005, *La comptabilité à Rome, essai d'histoire économique sur la pensée comptable commerciale et privée dans le monde antique*, Lausanne.

<sup>141</sup> On the involvement of the coin changers in auctions and their role, see Andreau, J., 1987, *La vie financière dans le monde romain, les métiers de manieurs d'argent (IVe siècle av. J.-C. – IIIe siècle ap. J.-C.)*, Rome. On the importance of coin changers and bankers, the studies of R. Bogaert are more detailed and, generally speaking, better. Bogaert, R., 1966, *Les origines antiques de la Banque de dépôt, une mise au point accompagnée d'une esquisse des opérations de banque en Mésopotamie*, Leyde; Bogaert, R., 1975, "Geld", *Reallexikon für antike und christentum*, Th. Klauser, Stuttgart, p. 798-908; Bogaert, R., 1983, "Les Kollubistikai Trapezai dans l'Égypte gréco-romaine", *Anagennesis, a papyrological journal*, 3-1, p. 21-64; Bogaert, R., 1983, "Note sur l'emploi du chèque dans l'Égypte ptolémaïque", *Chronique d'Égypte*, LVIII, p. 212-221; Bogaert, R., 1986, "La banque à Athènes au IVe siècle avant J.-C., état de la question", *Museum Helveticum*, XLIII, p. 19-49.

dominated the monetary economy after the 12<sup>th</sup> century. Places like Venice, Genoa, Florence and Rome were at the head of the main networks and personal and professional relationships between the main offices controlled the majority of money transfers.

From the middle of the Middle Ages, it is clear that a complete system of banking was organized and survived up to the creation of the modern Banks. These medieval banks mainly dealt with coins. At the bottom of the pyramid, there were coin changers, dealing with small change, changing copper, billon and silver (perhaps gold too). At the summit of the pyramid, the main network was able to transfer very large sums of money from one region to another and was able to lend large sums to the states. Between the two extremes, towns, regions and countries were included in a complete set of connections linking all persons dealing with money.

In this system the role of the Church was important, especially at the beginning of the period, either because the ecclesiastical structure was involved in the network (such as the Templars), or because lending activity was restricted to the Jews, a group that was at the edge of the Catholic organization of society.

During the modern period and in relation to the development of the Reformation, bankers grew independently from the Church. This evolution was supported by the Protestant countries which were some of the most dynamic at that time.

### 3.2.3 What do we know?

There are several pieces of proof for the use of bank accounts during the Roman period<sup>142</sup>.

The state also used accounts with a combination of systems of interest that produced very large sums of money, impossible to collect in coins, which could only have been the result of bank accounts. The best proof is the cancellation of debts in 118. The event was recorded by historians, by an inscription and by a sculpture placed in the Roman Forum

<sup>142</sup> Cicero, in 48 BC Cicero, *Ad Atticus*, XI, 1: 118 AD: Dio, *History*, 69, 8, 1; 118 AD: Inscription, CIL VI 967.

representing the destruction by fire of the registers of accounts<sup>143</sup>.

Once again, testimonies are taken from the ancient authors such as Cicero, *Ad Atticus*, XI, 1, in 48 BC. There are more examples from the Byzantine period. First, the period is better documented; secondly, the Church was the main institution that left documentation. Due to its organization, the large number of dioceses, the widespread use of writing, the network of churches, monasteries, bishops, etc., the Church was the right institution to develop a system of money transfers and banking.

### 3.2.4 What about the possibility of bank-notes in Ancient Europe?

So the Roman Empire (as the Greek one) had coin-changers and sometimes a network of coin-changers; a system of account for private and public accounts; the ability to transfer money from one account to another (a kind of draft); a network of representatives in each province; a centralized administration and a network of specialized representatives able to check coins (and why not bank-notes?).

So the Roman Empire could have had a bank-note system (as could all centralized empires have had), but the Roman Empire (as the Greek one) had no banknotes. What can be the reason? This reason is not linked to administration, nor linked to the absence of a printing system, nor any other impossibility.

A technical reason is not pertinent. The absence of paper could have been solved by using parchment<sup>144</sup>, wood<sup>145</sup>, more or less prepared animal skin (such as leather)<sup>146</sup>, or even

<sup>143</sup> Actually in the curia of Diocletian in the Forum. 118 AD: *Cancellation of one million of sestertii of debts* (1 million sesterces = 67.5 tons of gold = 810 tons of silver.). 178 AD: *Dio, History*, 58, 21, 1.

<sup>144</sup> Even playing cards were used for currency in French Canada from 1685 until 1757. See Shortt, A., 1925, *Canadian currency, exchange and finance during the French period*, Ottawa (2 volumes).

<sup>145</sup> Issues were printed on wood in Canada in 1763-1764 during Pontiac's Rebellion, and by the Hudson's Bay Company.

<sup>146</sup> Leather banknotes (or coins) were issued in a number of sieges, as well as in other times of emergency. During the Russian administration of Alaska, banknotes were printed on sealskin. A number of 19th century issues are known from Germanic and Baltic states, including the towns of Dorpat, Pernau, Reval, Werro and Woisek. In

tissues<sup>147</sup>. All these materials were used at one time or another<sup>148</sup>.

We also have to remember that the Roman administration was able to engrave copper "diplomas" with the details of the complete career of each soldier and to give one to each soldier and to keep a duplicate in Rome<sup>149</sup>.

So there was no technical reason to prevent Rome (or the Greek cities) from having a form of bank-note<sup>150</sup>.

We have to go back to the status of the coin in Ancient Europe: a coin was made from the metal kept in temples; it bore the representation

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addition to the Bielefeld issues, other German leather Notgeld from 1923 is known from Borna, Osterwieck, Paderborn and Pöbneck.

<sup>147</sup> Crane and Company patented banknote paper with embedded silk threads in 1844 and has supplied paper to the United States Treasury since 1879. Banknotes printed on cloth include a number of Communist Revolutionary issues in China from areas such as Xinjiang, or Sinkiang, in the United Islamic Republic of East Turkestan in 1933. Emergency money was also printed in 1902 on khaki shirt fabric during the Boer War.

<sup>148</sup> In this conference (Bank-notes, Barnard college, New York, April 2009), Alla Sheptun gave some very important details on the "assignats" of leather:

*Karamzin outlined the history of Russian currency, starting with the first experience of using some kind of assignats, made from leather, - so called kuny.*

*"Our ancestors got along from the ninth to the fourteenth centuries without metallic coins of their own, using only leather scraps which were sealed by the government and called kuny, that is, assignats; and they traded with the East and the West, with Greece, Persia, and the German Hansa. From the ninth century until 1228 these scraps suffered no decline in relation to silver, because the government kept on issuing them in sensible quantities. It is well worth noting that these leather assignats were replaced in Russia by silver and copper coinage during the most turbulent and barbaric periods of our servitude to the khans... The Tatars refused to accept the kuny, demanding silver instead". (Karamzin N.M. (1991) *Zapiska o drevney i novoy Rossii*. – Moscow;p. 78, Pipes, Richard. (1959).*Karamzin's Memoir on Ancient and Modern Russia: A Translation and Analysis (Russian Research Center Studies; 33)*. Cambridge, MA: Harvard University Press, p.171).*

<sup>149</sup> These diplomas were about 20x15 cm each. A legion was composed of about 4,000 men. There were sometimes up to 35 legions...

<sup>150</sup> As Engels said about food ("The proof of the pudding is in the eating"); the proof of the bank-note is its use. Everything used as a bank-note (or assignat, etc.) is a bank-note...

of gods; from a legal point of view, forgeries were equivalent to a crime against the gods; from a religious point of view, gold was the flesh of the gods.

There is no discussion about the existence of bank-accounts during the Middle-Ages and the Modern period.

The only thing that can explain the absence of "bank-notes" in Ancient Europe is not a technical reason, but the impossibility for the Ancient world to dissociate "value", "power" and "wealth" from something linked to the gods. The Ancients always saw the world in relation to the gods. Even the coinage (Moneta) was a goddess.

Bearing the face of a god, of the emperor, a coin was something sacred. To imitate it, to destroy it was a crime against the divinities<sup>151</sup>. On the other side, the gods were the guarantors of the strict intrinsic and face value of the coin. A genuine god for a genuine coin...

So it was completely impossible to imagine an anonymous means of payment that was not guaranteed by the metal of a god. It was not imaginable to have a secular method, aside from a religious one, to transfer wealth. The bank note was not yet imaginable in scholastic Europe: its development was linked to the decline of religion.

During the Middle-Ages, the tradition was to use gold for major expenses. For larger sums, the way to pay was to use a bank or to use barrels of coins or bags of coins. In any case, even via the banks, the sum had to be paid in cash in one way or another.

In this way, medieval and modern Europe stayed in the ancient Greek and Roman tradition. The value of a coin was a mixture of its metallic value increased by seignorage and the value given by the minting operation (including the decision of the king to increase the value of the coins).

<sup>151</sup> Cassius Dio, Roman History, 78, 16: (During the reign of Caracalla, dead in 217) *A young knight carried a coin bearing his image into a brothel, and informers reported it; for this the knight was at the time imprisoned to await execution, but later was released, as the emperor died in the meantime.*

The gold or silver coin was in fact the unit of account and all other coins were understood as fractions of the gold or silver coin.

In this context, there was no place for the banknote.

### 3.3 *The question of the export of coins*

One of the most common explanations for the change in the monetary stock is linked to the question of the import and export of the metal<sup>152</sup>.

We have to remember that the influx of gold and silver completely changed the monetary system during the 16<sup>th</sup> century. A large part of this metal flowed from Europe or Mexico to East Asia via the Middle East, India, the Philippines, etc. This phenomenon has been widely documented and analyzed even by the writers of the 16<sup>th</sup> century (Bodin, Malestroict, etc.).

On the contrary there are very few analyses of the "smooth export" of precious metals in other periods.

The appearance and disappearance of metal are common to the monetary history of all civilizations. If it is easy to understand the appearance of new metal or the development of new issues, the slow decrease of the monetary stock is less easy to explain. There is, in general, no special event that can explain the diminution, although there are, in general, many facts that can explain the development of minting: new mines, new imports, and new booty.

The most current explanation is that the decrease in the stock of metal that could be used by the mints was linked to an exportation of metal. The reasons given for this export are: tribute paid to potential invaders (to "buy" peace), tribute or booty taken by enemies during wars and a deficit of the "commercial balance".

All these explanations are very coherent and correspond to possible, but partial explanations. In the case of the tribute paid to enemies to avoid invasion, we have to balance the cost of the tribute and to compare it to the possible cost of war: salaries for soldiers, pay for

<sup>152</sup> Peng, X., 1994.

mercenaries, weapons, food and the costs of loss and rebuilding, for example.

When it has been possible to compare the cost of tributes paid to the potential cost of wars, in, for example, the Byzantine period, the general impression is that the cost of tribute was less than the cost of war<sup>153</sup>. On the one hand, the expenses due to wars were mainly internal expenses: sums were given to merchants and soldiers of the Empire (with the exception of mercenaries). On the other hand, tributes were completely external expenses as the metal was exported, but a part of the tribute was hoarded or transformed into jewelry and a large part seems to have been used to buy goods from the empire that paid the tribute.

As far as commercial deficit is concerned, this interpretation is a consequence of bullionist or mercantilist analyses of commercial exchanges.

It means that the general balance (imports / exports) is in deficit, whatever the importance of the imports and exports. Unfortunately, we only have information from the countries that imported goods. The complaints are the same, describing merchants wanting to be paid in precious metal and selling a huge amount of goods.

In general, I consider that the possibility of accepting a relationship between the possible export of precious metal and the diminution of the precious monetary stock as improbable. This analysis belongs, in my point of view, more to a kind of nationalist literature than to the reality of the economic facts<sup>154</sup>.

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<sup>153</sup> Iluk, J., 2007.

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<sup>154</sup> Depeyrot, G., 1991, "The Disappearance of Gold From the Later Roman Empire and the Myth of the Seductive Orient", *Money, Coins, and Commerce: essays in the Monetary History of Asia and Europe (from Antiquity to Modern Times)*, Proceedings of the "4th and 5th International Monetary History Conferences" organized in June 1987 at the Keio University at Tokyo by Professor Akira Hayami and in April 1989 at the Delhi School of Economics of the University of Delhi at New Delhi by Professor Om Prakash, Leuven, p. 491 – 502.

## BIBLIOGRAPHY

- CAUWENBERGHE E. Van (1991) *Money, coins and commerce: essays in the Monetary history of Asia and Europe*, Leuven.
- DEPEYROT G. (1995-1996) *Histoire de la monnaie, des origines au 18e siècle, I, Introduction, de l'antiquité au 13e s., II, Du 14e au 16e siècle, III, Les 17e et 18e siècles*, Wetteren.
- FLYNN D. O. (2009) A price theory of monies, Evolving lessons in monetary history, collected papers, Wetteren.
- GLAHN R. von, "A Reassessment of the Role of Silver in the Multiple Currency System of the Song Dynasty", Work paper for presentation at the workshop on "Chinese Monetary History Revisited: From Multiple and Complementary Viewpoints," University of Tokyo, 21 May 2007.
- GLAHN R. von (1996) *Fountain of Fortune, Money and Monetary Policy in China, 1000-1700*, Berkeley.
- GLAHN R. von (2003) "Money use in China and Changing Patterns of Global Trade in Monetary Metals 1500-1800", *Global connections and Monetary History, 1470-1800*, Hants, p. 187-205.
- ILUK J. (2007) *Aspects économiques et politiques de la circulation de l'or au Bas-Empire*, Wetteren.
- JACOBS N. and VERMEULE C.C. (2009) *Japanese coinage*, New York.
- KURODA A. (2007) "Asian monetary history revisited, Introduction to the new series: uncommon "common sense", *International Journal of Asian Studies*, 4/1, p. 45-49. KURODA, A. (2007) Emancipate the Chinese Monetary History from the Aristotle Postulates; From Multiple and Complementary Viewpoints; work paper, conference 21st May, 2007 at the Sanjo Hall, University of Tokyo.
- KURODA A. (2009) The Eurasian silver century, 1276–1359: commensurability and multiplicity, *Journal of Global History*, 4, pp. 245–269.
- MIYAMOTO M. and SHIKANO Y. (2003) The Emergence of the Tokugawa Monetary system in East Asian International Perspective, *Global connections and Monetary History, 1470-1800*, Hants, p. 169-186.
- PENG X. (1994) *A monetary history of China*, translated by E. H. Kaplan, Washington.
- PRAKASH O. (2004) Precious Metal Flows into India in the Early Modern Period, *Bullion for Goods, European and Indian Merchants in the Indian Ocean Trade, 1500-1800*, Manohar, p. 326-336.
- SPOONER F. C. (1956) *L'économie mondiale et les frappes monétaires en France, 1493-1680*, Paris.
- YU L. and YU H. (2004) *Chinese coins, Money in History and Society*, San Francisco.