



Takashi Okubo
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*Proceedings of the ICOMON meetings, held in conjunction with the
ICOM Conference, Melbourne (Australia, 10-16 October, 1998), ed.
by Peter Lane and John Sharples.*

*Melbourne, Numismatic Association of Australia, Inc, 2000. 117 p.
(NAA Special publication, 2). (English). pp. 19-25*

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MINING FRONTIERS AND THEIR IMPACT ON MONEY FROM THE VIEWPOINT OF JAPANESE MONETARY HISTORY

by Takashi Okubo
Currency Museum , Bank of Japan, Tokyo, Japan

Looking at the mining history in Japan, we had modernization and drastic innovation of mining from the beginning of the Meiji Period (1868). Before this period, there were two periods of big development. One was from the 7th century to the 8th century and the other was from middle of the 16th century to the early 17th century.

In the latter period, when the modern feudal system was established, gold and silver mines were exploited across the nation and gold and silver production was remarkably increased. This exploitation was promoted by the vigorous feudal lords in the Sengoku War Period and gold and silver were used as war funds or rewards to the vassals who rendered distinguished services. With the development of commerce and industry since the Muromachi Period (around the 14th to 16th century), these two metals were used and circulated as currencies with much higher value than copper coins.

The drastic expansion of gold and silver production, especially of gold, had a great effect on foreign trade after the middle of the 16th century. At this time, a lot of Chinese commercial ships came to Japan to obtain Japanese silver. The trade between Portugal and Japan was in fact the trade between Japanese silver and Chinese goods such as raw silk. In succession, the Netherlands and Great Britain found a new trade opportunity in the

Orient and started the trade with Japan. In this trade too, the Netherlands and Great Britain acted as a mediator between Japan and China, the same as Portugal. The center of trade in the Orient was China. It is well known that Mexican silver flowed into China by way of Manila but it should be noted that Japanese silver occupied the more important position for about one century after the middle of the 16th century. Japan imported raw silk and silk fabrics from China and Indochina. The success or failure in the trade with Japan depended on whether mediators could obtain Chinese commodities. Japan was rejected as a trading partner visiting Chinese ports by China, therefore Japan could only obtain Chinese commodities in other countries.

The 16th century brought a big change in world mining history. We should take notice of exploitation of mines on the American Continent, especially the drastic increase of silver which resulted from the opening of the Potosi silver mine in Bolivia and the introduction of the amalgam refine system. Gold production was almost stable throughout the 16th century. On the other hand, silver production was steeply increased after the middle of the 16th century.

The trend in production of gold and silver in Japan could be regarded as similar to the trend worldwide. From the viewpoint of the economic sphere, Japan was not

isolated in the Far East, but involved in the worldwide gold and silver economic sphere. A huge amount of silver was exported from Japan to China and Eastern Asia. Japan imported gold from China, the Philippines, Sumatra, and so on. It could be said that Japanese silver played a very important role in the trade with the Orient by western countries. Massive inflow of the Mexican silver to China through the trade, export of silver from India to China, and move of gold from Southeast Asia to Europe should be studied considering the relation of value between gold and silver in the Orient. In addition, it should also be noted that these issues had a close relation to gold and silver production in Japan, and trade with Japan. The various parities between gold and silver in South East Asia were gradually made uniform or flattened between the end of the 16th century and the early 17th century.

Historically, Japanese coinage was greatly influenced by China and the first coin was made of copper. It is believed that the first official coin was minted in 708 and called "Wado Kaichin".¹ After this Wado Kaichin of the 8th century, copper coins were the mainstay² of Japanese coinage until the 17th century. The gold coin as a currency has a short history in Asia in contrast to a long history, originating from the "Electrum coin" in Europe.

In the beginning of the 17th century, Tokugawa Ieyasu who was one of the local lords in the Sengoku War Period won the wars and started the Tokugawa government or Edo government in Edo (now Tokyo). The currency system the Tokugawa government established was quite interesting

because three kinds of coin (gold, silver, and copper) were used simultaneously in one country and they were exchanged at a floating rate every day.

There is no doubt that aggressive exploitation of gold mines was the background to the fact that the Tokugawa government used gold for currency. But this was not the beginning of exploitation of the gold mines. A large amount of gold has been produced in history. For example, Japan was described as a country full of gold in *The Travels of Marco Polo*³ written by Marco Polo, an Italian traveler of the 13th to 14th centuries. It is said that the story was not a total fantasy, and was written based on the "Golden Building of the Chusonji temple" built by Oushu Fujiwara, who was a lord of the Oushu area (northern Japan) in the beginning of the 12th century. The "Golden Building of the Chusonji temple" is literally golden building covered with gold foil, and the gold used for this temple is thought to be produced in the Oushu area.

It is very interesting that gold was not used for currency until the 17th century, although Japan was thought to be one of the major gold producing countries in the world at that time. Then what on earth was gold used for? Gold was found in the shape of gold dust in 749 in Mutsu (northern Japan). The discovery of gold was reported to the Imperial Court and gold was presented to the Emperor. A great image of Buddha was in the process of construction by the Emperor's order and 441 kilograms of gold dust found in Mutsu was used as a part of Buddha image. With these two examples of the Chusonji temple and the Buddha image, it can be thought that gold was a symbol of

power and mainly used for religious purposes.

In addition to these usages, gold and silver were used as an important medium of exchange in foreign trade. After the latter half of the 8th century, gold became the main export article from Japan, and by the middle of the 9th century gold came to be used also in trade at the Kyushu Dazaifu, shifted from cotton. The fact that the gold was used as a medium of exchange in trade was noteworthy especially after the middle of the 12th century. Japan was short of copper coins, which were mainly used as currency at that time, due to the expansion of commerce, so to cope with the strong demand for copper coin, gold was exported to China in exchange for Chinese So-sen or the Song Dynasty copper coin.

The change of the role of gold from an export article to a currency had a close relation to the exploitation of the gold mines. The production of gold in Japan originated from the discovery of gold dust in 749 in Mutsu (northern Japan) as mentioned before. The control of gold was totally centralized and the gold dust was gathered to Nara where the central government was located. The strict control of the gold restrained the general public from rushing to the gold mines to dig. Instead, the exploitation of gold mines was promoted by the central government and exploitation was broadened and expanded to the north. This is the first gold rush. The second gold rush was seen in the Oushu Fujiwara domain in the 12th century. The "Gold Building of the Chusonji temple" mentioned before was built by Oushu Fujiwara. Oushu Fujiwara ruled all over Oushu and controlled gold mines there (today's northern part of

Yamagata prefecture and southern part of Iwate Prefecture). Oushu Fujiwara was trading with China (Song Dynasty) individually, separate from the central government with a huge amount of gold in his domain. There is a good possibility that the rumor of the "Gold Building of the Chusonji temple" came from China through the trade between Japan and China and that Marco Polo knew it and wrote about it in his book.

In the Kansai area where the central government was located, Tairano Kiyomori, who was a samurai warrior, was encouraging the trade with China (Song Dynasty). From China to Japan, copper coin, medicines, incense perfume, silk fabrics, books, and drawings were mainly imported. Among them, copper coins were the most important article in the trade. From Japan to China, mercury, sulfur, maki-e gold and silver lacquer, fans, and byobu screens were exported. Among them, the most important article was gold. In short, the trade between Japan and China was the exchange of Japanese gold and Chinese copper. The reason China imported gold was that the parity between gold and silver was 1:5 in the trade with Japan, although about 1:13 in the trade with the Islamic countries and the Europe. That means gold was relatively cheap in Japan. Japan was one of the major gold producing countries in the world and the relative value of gold in Japan was low. China made an enormous profit by importing gold from Japan and on the other hand, Japan could develop its economy with copper coins imported from China.

In the 14th century, ruled by the Muromachi government, the Shogun Ashikaga Yoshimitsu built

the residence in Kitayama, Kyoto, which was later transformed to the "Rokuonji Kinkakuji temple". The "Kinkakuji temple" was golden, covered with gold foil. It is believed that he built this residence aiming at showing the dignity of the most powerful person. Gold was the main export article in the trade with China (Ming Dynasty) at that time and a symbol of power, too.

The Muromachi Period was followed by the Sengoku War Period when a lot of wars were fought by the local feudal lords. Local feudal lords had to obtain a lot of weapons and ammunitions in order to fight, and consequently needed gold and silver. It is in this period that exploitation of gold and silver mines was greatly promoted. Many gold and silver mines such as Iwami silver mine in Chugoku area and gold mines in Koshu or Jouetsu Sado were exploited. Under these circumstances, silver was exported in large amounts through the trade between Japan and China (Ming Dynasty). Import of silver from Japan to China was increased especially from the latter Ming Dynasty to Qing Dynasty. The background was as follows. China exported a large volume of copper coins to Japan and copper in China was near to exhaustion. On the other hand the demand for currency in China was increasing as the economy in China was developing, so silver came to be used as currency. China imported silver not only from Japan but also from Great Britain in return for tea.

It is said that Takeda Shingen, who was one of the local feudal lords of the Sengoku War Period and ruled the Koshu area, first minted gold coins in Japan. He promoted exploitation of a lot of gold mines, such as Kurokawa gold mine and

minted "Koshu Kin" or "Koshu gold" coin. "Koshu Kin" was of a fixed weight and was counted every four numbers with units of ryo, bu, shu, and itome. These currency units were succeeded by the currency system in the Edo Period. By the way, the technology of gold mining served not only for mining but also for development of the engineering work. This technology was applied to construction of roads and to an attack strategy of digging around the enemy's castle in the battlefield.

Tokugawa Ieyasu, who won political control of Japan and started the Edo government (Tokugawa government), placed gold and silver mines all over Japan under direct control, aiming at concentration of gold and silver in the central, that is Edo, government. Among these, gold production in the Sado gold mine was rapidly increased with the development of the mining technology, and there a kind of gold rush occurred. But the gold deposit ran out and the Sado gold mine was closed after ten years. This time again, there was not a gold rush as the general public frantically rushed to the mines, due to the central government's control over the gold.

After gaining of gold and silver, the Tokugawa government embarked on the unification of the currency as a next step in their rule of the nation. The copper coins, which had been used since medieval times, were prevalent and common as currency in those days. Simultaneously, however, silver was used as a means of settlement in the international trade. The copper coins were circulated across the nation, but silver came to be used as a common means of settlement in the Kansai area because international transactions were conducted in this area, mainly

Osaka. Attempting to secure political power, the Tokugawa established their government in Edo (now Tokyo), where it was different from the past, and also introduced a new system for currency. The Tokugawa government adopted gold coins that were originally minted by the lord Takeda in the Sengoku War Period into the new currency system. As a matter of fact, however, it was difficult directly to place gold at the center of the currency system, because the copper coins were common among the public and silver coins were widely used in Kansai area such as Osaka. The Tokugawa government thus decided that three kinds of coin, gold, silver and copper were all official currency. The official conversion rate for gold, silver, and copper coins was fixed at the same time, but in reality the rates among them fluctuated daily since the government could not specify the base currency. This was a multi-currency system and quite unique in history. In addition, this can be interpreted as an advanced monetary system in that it was managed daily, in other words, the accounts system for multi-currencies was established.

It is usually acknowledged that Japan was isolated from foreign trade after 1641 (the early Edo Period) when the trade control policy of national isolation was introduced. In fact, however, this policy could be a managed trade system to monopolize trade profit, as the Edo government kept trading with some selected partners such as the Netherlands (at Dejima, Nagasaki), China, and Tsushima. In the Edo Period, koban gold coins were exported from Japan in large amounts as well as silver by the Dutch merchants. There is an old record reading that Japanese kobans

were exported to India through the transactions with the East India Company of the Netherlands. The Tokugawa government took various measures to prevent the massive outflow of the gold coin, including re-coinages changing the gold content of the coin to meet the domestic demand for currency when gold production declined.

Essentially, the gold coin was circulated as currency backed by its quality. Therefore, it would be necessary for the Tokugawa government, issuer of currency, to have public confidence for smooth circulation if the gold coin was debased. It turned out, however, that re-minted coins were circulated anyway, although not every currency was accepted as it was with no problem. This fact is another interesting point of the currency system under the Tokugawa government.

The Tokugawa government abandoned the national isolation policy and opened ports to foreign trade in 1859. At that time, the parity between gold and silver in Japan was 1:5, as opposed to 1:15 in other countries. Silver was three times higher in Japan. This was a process the managed ratio of gold and silver price encountered in the transition from the isolation policy under the Tokugawa government to the open-port policy. The problem lay not only in the internal and external disparity between gold and silver but in the exchange of silver between the different currency systems, that is the Western silver in the principle currency system and Japanese Ichibu-gin silver situated as the subsidiary coin to the koban gold coin.

As already mentioned, the currency system of the Edo period consisted of

three kinds of currencies, gold, silver, and copper. Among them, the value of gold and silver was not backed by their metallic value. Frequent re-coinages greatly debased the quality of gold and silver coins towards the end of the Edo government and in addition, silver coins came to be situated as the subsidiary coin to the gold coin as the value of the silver coin was separated from its metallic value. The Tempo koban gold coin was 11.3g with 57% fineness and the Tempo Ichibu-gin silver coin was 8.6g with 99% fineness. In comparison, the Mexican silver coin used for settlement of foreign trades, for example, was 27g with 90% fineness. The internal conversion rate between gold and silver in Japan was set at 1 ryo of gold coin to a 4 bu silver coin. This rate did not reflect the metallic value of the gold and silver coin, but the ratio of koban gold coin and Ichibu-gin silver coin established under the currency system of the Tokugawa government. When resuming foreign trade, the United States demanded that western silver coins should be exchanged to silver of the same weight, which meant one western silver coin to three pieces of Ichibu-gin silver coin. From the viewpoint only of exchange of silver, the exchange was acceptable although the silver of three pieces of Ichibu-gin silver coin was slightly more than that of one western silver coin. When it comes to exchange between silver and gold, a huge profit was generated. The merchants from other countries exchanged western silver coin into the Ichibu-gin silver coin then exchanged the Ichibu-gin into the koban gold coin and obtained profit

easily from the disparity between internal price and external price. Four pieces of western silver coin could be exchanged into twelve pieces of Ichibu-gin silver coin. Where the parity between gold and silver is 1:5, twelve pieces of Ichibu-gin silver coin could be exchanged into three pieces of koban gold coin. If the merchants exchanged koban gold coins into silver coins overseas, taking advantage of parity between gold and silver of 1:15, they received three times more silver than usual. They did not miss this opportunity. They brought in a huge amount of silver to Japan and took out a huge amount of gold in return.

The Gold Rush occurred in California in 1849, followed by Australia in 1851. In Japan at around the same time, gold mines were not found and exploited but it could be said that a kind of Gold Rush occurred in Yokohama. This is because of the fact that the gold flowed out⁴ in large amounts from Yokohama playing an important role in resumption of foreign trade.

To prevent outflow of gold from Japan, the Tokugawa government carried out a re-coinage of the Tempo koban gold coin. The Tokugawa government issued Man'en koban (3.3g, 57% fineness), reducing the amount of pure gold to about a third of the Tempo koban gold coin in order to balance the disparity of gold and silver between internal and external price. This was the last re-coinage by the Tokugawa government and finally the outflow of gold was stopped.

Views expressed in this paper are those of the author and do not necessarily reflect those of Bank of Japan.

END NOTES

- ¹ "Wado Kaichin" was minted modelled after a Chinese coin "Kai Yuan Tong Bao".
- ² "Wado Kaichin" had two kinds, silver coins and copper coins. It is believed that only copper coins were used as a medium of exchange.
- ³ Aldo Ricci, *The Travels of Marco Polo*, translated into English from the Text of L.F. Benedetto. (London, 1931)
- ⁴ The total outflow of gold from Japan to other countries at that time was estimated about 500,000 ryo.