

「일반 논문」

A Tale of Money: The 100-cash of the Chosun Dynasty in Korea

Young-Yong Kim · Yoong-Deok Jeon

Abstract

In the late Chosun dynasty in Korea, debasement was not sufficient to collect seigniorage revenue to meet ever increasing fiscal expenditure. Thus the government circulated a large-denomination currency named *tangbaekchon* to provide greater revenue for the state. It is found that the government meddled with money to get seigniorage revenue, which is very similar to the experience of many other countries. The conventional wisdom of inflation being a monetary phenomenon is also confirmed. The monthly rate of inflation reached 7.3 - 7.5 percent. In addition, Gresham's law was operative due to the legal-tender laws. Finally the large currency was eventually withdrawn from circulation because of its serious inflationary effects.

Keywords: Chosun dynasty, *tangbaekchon* (100-cash), *sangp'yong t'ongbo* (ever-normal cash), debasement, seigniorage, inflation, Gresham's Law

I. INTRODUCTION

This paper explores the history of a large-denomination currency circulated in the late Chosun dynasty in Korea, and examines the effects of its circulation on the economy of the time. Specifically, this study focuses on the motives of government's meddling with money, its impacts on inflation and seigniorage, and the operation of Gresham's law. Findings are derived as follows. First, it is found that the purpose and process of government's meddling with money in the traditional Korea is very similar to those of many other countries. Second, the government collected a lot of seigniorage revenue. Third, the conventional wisdom of inflation being a monetary phenomenon is confirmed. Finally, Gresham's law was operative and Selgin's (1996) argument is a complement to Rolnick and Webber's (1986).

In 1867, the Taewongun administration minted and circulated a large currency named *tangbaekchon* to collect greater profits from seigniorage.¹⁾ Although its real metallic value was five or six times that of the standard copper currency called *sangp'yong t'ongbo* that had circulated in the Chosun dynasty since 1678, it had one hundred times the par value of *sangp'yong t'ongbo*.²⁾ The general state of the impoverishment

1) Because the meaning of *tangbaek* is one hundred, and that of *chon (jon)* is cash or money, we henceforth, unless otherwise specified, call it 100-cash following Palais (1975).

2) Since the meaning of *sangp'yong* is ever-normal, and that of *t'ongbo* is circulating treasure or cash, we hereafter, unless otherwise specified, call it

in the traditional Chosun dynasty created income level too low for the government to collect sufficient tax revenue to finance its real expenditure gap. Thus the government sometimes debased the metallic content of the currency to secure more profits from seigniorage. In fact, the Chosun dynasty debased the weight of currency three times in the first half period. However, the seigniorage revenue from debasement was not sufficient to fill the expenditure gap when the Taewongun gained the political power. As a result, the Taewongun administration minted the large-denomination currency to provide greater revenue for the state.³⁾ It minted approximately 16,000,000 *yang* of 100-cash for only six months, which comprised approximately a half of total stock of money until that time, thereby resulting in a high rate of inflation.⁴⁾ In this process, *tangbaekchon* (cheap money) drove *sangp'yong t'ongbo* (dear money) out of circulation for a limited time period. At the final stage of this episode, the government withdrew *tangbaekchon* from marketplace because people did not accept it

ever-normal cash following Palais (1975).

- 3) The government had previously tried several times to put a large-denomination currency into circulation to collect seigniorage revenue in the seventeenth and eighteenth centuries. Yet its issuance had been denied because kings and high government officials accepted the argument that the primary reason of circulating currency is not to gain seigniorage revenue, but to promote exchange of goods and services in the market.
- 4) Money was accounted as the decimal system in the period of the Chosun dynasty. The basic accounting unit of *sangp'yongt'ongbo* is *pun*. One *yang* is equal to ten *chon* (*jon*), which is equal to one hundred *pun*. Therefore, one unit of 100-cash is equal to one hundred units of *sangp'yongt'ongbo* or one *yang*.

as a medium of exchange any longer.

The remainder of the paper is structured as follows. Section II briefly explores the monetary history of the latter half of the nineteenth century, 1860s to 1890s. Section III discusses the government budget deficits and the motives of debasement of ever-normal cash and of minting of 100-cash. Section IV examines the effects of debasement and introduction of 100-cash on the government seigniorage and price level. The operation of Gresham's law will then be investigated in section V. Finally, a concluding summary is offered in section VI.

II. THE MONETARY HISTORY: 1860s to 1890s

Money has been used as a medium of exchange in Korea since the early tenth century. In the period of the Koryo dynasty, from the tenth to the fourteenth century, a few metallic coins had served as commodity money in the restricted areas. The Chosun dynasty that succeeded the Koryo dynasty tried in vain to force the people to use a legal-tender, chosunt'ongbo, in the early period because a few commodity monies were spontaneously used in the marketplace and, until those days, trade was not developed enough to use metallic coins.⁵⁾ During the first half of the Chosun dynasty, from the fifteenth to the mid-seventeenth century, cotton fabric, along with hemp fabric, was predominantly used as a commodity

5) Kim(1971), p. 29 and Lee (1996), pp. 122-123.

money although both the government and the general public minted and circulated several metallic coins as mediums of exchange for their needs in the restricted areas.⁶⁾ In this period, the government did not monopolize on minting business since those metallic coins played a minor role.

In 1678, King Sukchong newly introduced ever-normal cash into circulation to secure profits from seigniorage. The ever-normal cash was declared as the legal-tender. The exchange rate between silver and ever-normal cash was initially fixed by the government, but the King soon allowed the market to determine it.⁷⁾ It was accepted for payments in the region of the dynasty in the early period of the eighteenth century.⁸⁾ The cotton fabric was also used in this period, but its importance diminished. At this time, private minting was made illegal because the government wanted to monopolize minting business although it was not easily prevented. Glasner (1998) argues that a monopoly over money was vital to the security of the state.⁹⁾ It seems that the dynasty recognized the importance of the monopoly over money for its security.

6) The fabric with a specific length and width was used as money. It was classified into three groups according to its quality.

7) Since the mid-seventeenth century, the currency system had been bimetallic. Both silver and copper currencies were used, but copper currency played a major role. Silver currency was a large-denomination one and held mainly as a means of storing wealth. In this study, therefore, silver currency will not be discussed.

8) For details, see Lee (1996), p. 124.

9) On an evolutionary theory of the state monopoly over money, see Glasner (1998).

A noticeable decline in profits from minting ever-normal cash mainly occurred during the period 1730s to 1810s because of shortage of copper, the main ingredient of coins. However, the government was reluctant to import copper because of its fear of silver outflow to pay for imports. Domestic production of copper was also depressed because of primitive technology, lack of rational management, and government's attempt to prevent private minting. Thus, to keep seigniorage at least constant, the dynasty debased the weight of the currency three times. It was debased from 10 grams in 1678 to 8 grams in 1742, and to 6.8 grams in 1752. In 1757, it was debased to 4.8 grams and remained constant for a long time up to the year of 1866.¹⁰⁾ The government still prevented by law the general public from minting the coins.

King Chungjo, being at the office from 1777 to 1799, appointed Hojo, the Ministry of Taxation, as the sole department of mint, and let it set the rule about coinage. The ever-normal cash had been minted on a yearly basis since 1751, and approximately 10,000,000 *yang* of it was put into circulation by 1800. If one includes privately minted ever-normal cash, its total volume must have reached much more than 10,000,000 *yang*.¹¹⁾ At the end of the first half of the nineteenth century, the dynasty faced serious financial difficulties because of economic stagnation, political and social

10) See Won (1967), p. 314 for details.

11) See Palais (1975), p. 166.

turmoil, the wide spread corruption of official agents, and many institutional failures. Furthermore, the Ministry of Taxation could not function properly as the sole department of mint. The central and many local governments participated in minting business. Even without any official announcement, the metallic currency was debased and its quantity increased. Moreover, the government even sold special minting privileges to the rich people and businessmen to minimize its minting costs. Such an arrangement made matters worse, however. Thus metallic currency was further debased and increased in its quantity.

The Chosun dynasty had still encountered rapidly changing environments in its early second half. Externally, imperial states such as Japan attempted to occupy the dynasty as their colony. Internally, feudalism and monarchy began to collapse. Taewongun, father of King Kojong, had gained real political power in governing the state at that time. He had to protect the dynasty and people from the aggression of imperial states. Also he would like to reconstruct *Kyongbok* palace, which was thought of as the symbol of strengthening King's authority.¹²⁾ Moreover, welfare programs for the poor should have been established since bad harvest had frequently occurred and persisted for a long while. In sum, the Taewongun administration had faced an ever increasing demand for resources for military purpose, reconstruction of *Kyongbok*

12) *Kyongbok* palace is a building where the King discussed with his subjects about politics and public policies. It was burnt down when Mongol invaded the Chosun dynasty.

palace, funding of new grains loan, and so on. But it could not collect taxes sufficient to meet those needs because of many reasons including impoverishment prevailed in the late Chosun dynasty.

Taewongun introduced a new coin, *tangbaekchon* of which nominal and real values and total supply were discussed in the previous section. Debasement and a sudden increase in 100-cash as well as private minting of both the new and old currencies resulted in a dramatic increase in the prices of goods and services. For example, the price of rice rose from 7–8 *yang* to 44–45 *yang* per *sok* in about two years.¹³⁾ To control high inflation, the government took in vain some coercive measures such as fixing the prices of goods and services.¹⁴⁾ In the end, however, the general public denied using 100-cash as a medium of exchange once they recognized the real value of the currency fell so much. Therefore, the government withdrew 100-cash out of circulation in the late 1860s.¹⁵⁾

Although our main concerns in this study are the motives of debasement and introduction of 100-cash, and their effects on

13) The *sok* is a measurement unit of cereals such as rice. One *sok* is equivalent to 180.4 liters (4.9629 bushels).

14) See Palais (1975), p. 213.

15) Won (1967) argues that, in the year of 1868, *tangbaekchon* was withdrawn by the dynasty. See Won (1967), pp. 315–316. However, Palais (1975) claims that there is no such evidence, but that it is sure that 100-cash in circulation was withdrawn by the dynasty. See Palais (1975), p. 341, n. 71. Yoo (1974) argues that in 1873 the government withdrew *tangbaekchon*. See Yoo (1974), p. 513. Thus the time when the government withdrew *tangbaekchon* is not so sure.

the economy of the time, we need to mention what happened after 100-cash was withdrawn from circulation. A Chinese currency called Ch'ing currency was officially allowed to be imported in June 1867 and tang'ojon was newly issued in 1883 with the same motives as the case of 100-cash.¹⁶⁾ This resulted in almost the same outcome as in the case of 100-cash. High inflation recurrently occurred. Bordo (1986) suggests that repeated debasement, even when followed by restorations of the standard, would be anticipated by the public and hence rendered far less effective than an unanticipated debasement. Thus the government might collect some seigniorage revenue but not much, because repeated debasement might well undermine the revenue-generating potentials of subsequent debasement.¹⁷⁾ The two currencies drove the ever-normal cash out of the marketplace for a limited time. Finally, the government withdrew the two currencies from circulation. On July 11, 1894, King Kojong announced "The Rules for the Issuance of the New Currency" under compulsion of Japan. It included an article of

16) The Ch'ing currency was imported from China for circulation soon after 100-cash was withdrawn from the marketplace. Its intrinsic metallic value was one third of ever-normal cash whereas the par values of the two currencies were approximately the same. The Taewongun administration imported Ch'ing currency with the same motive to get seigniorage from its circulation. However, it was eventually abolished in 1874. Its total amount circulated in 1874 was three to four million *yang*. The par value of tang'ojon was five times that of ever-normal cash whereas its intrinsic metallic value was one or two times that of the latter. The data about the total stock of tang'ojon minted are not available.

17) On the effects of anticipated debasement, see Bordo (1986).

abandonment of right to issue money.¹⁸⁾ At the end of the 1890s, monetary exchange was retreated almost to direct exchange or barter.¹⁹⁾

III. GOVERNMENT BUDGET DEFICITS AND DEBASEMENT

In the late period of the dynasty, demand for the government expenditure increased much higher for several reasons. In contrast, the tax burden on the peasants was so high that there seemed to be no more room for the government to collect more taxes. The tax rate reached approximately 50 percent of total harvest on land in the latter half of the Chosun dynasty.²⁰⁾ It increased much more after 1592 because of the exhaustion of military expenses and the expansion of government size. Thus the demand for fiscal expenditure increased, but collecting more tax was severely limited in the latter period of the nineteenth century. Under this environment, the Taewongun administration minted the large-denomination currency to gather greater profits from seigniorage.

There were several reasons why the government revenue should be increased. First of all, as briefly described in the previous section, Taewongun planned to rebuild *Kyongbok*

18) In 1910, 16 years after this incident, the Chosun dynasty was completely colonized by imperial Japan. From 1894 to 1910, the dynasty was partly controlled by Japan. These successive events perhaps provide an evidence that supports Glasner (1998). A further research is needed on this subject.

19) See Bishop (1898), translated into Korean (1994), p. 351.

20) See Kim (1984), p. 366.

palace and to repair government buildings as a symbol of consolidating King's position in the dynasty. Such a plan required a lot of resources. He knew in advance that tax revenue would not be sufficient to successfully accomplish his plan. He forced the people to contribute to the government money, labor, and building materials. It was in fact implicit taxes. Although large amounts of contribution were forcibly assigned to the people, actual amounts raised comprised only a small portion of the funds required. Thus he sought to find a magic way to gather much money from the general public.

Second, the Russian fleets in 1865 called for opening the door of the dynasty for trade and a diplomatic relationship with Russia. Next year, the battleships of Germany, the United States, and France intruded into the national border of the Chosun dynasty. Japan had a strong desire to colonize the dynasty. The government required increased military expenses to defend the dynasty against foreign invaders. It also should have paid lots of money for establishing new relations with many foreign countries.²¹⁾ It spent a lot of resources for the government officials and experts in private sectors to let them learn advanced technologies and institutions from Japan and other foreign countries. Furthermore, resources had been wasted for a long time because of too many government officials being hired.

21) Before the 1860s, the Chosun dynasty had no diplomatic relations with foreign countries except two, China and Japan.

Table 1. Areas of Taxable Land (unit: *kyul*)

year	area
1451 – 52	1,632,000
1591	1,708,000
1611	541,000
1807	1,456,592

Source: Kim, Ok-Kun (1984), p. 371, Table 7–6.

On the other hand, tax revenue did decrease or at least did not increase for the following reasons. First, the taxable land, which was the main tax base, had been decreasing. Table 1 shows total areas of taxable land in four sub-periods. From 1592 to 1599, the dynasty was at a long and destructive war with Japan. The taxable land decreased to 541,000 *kyul* in 1611.²²⁾ In 1807, it was approximately 85 percent of that in 1591. Heavy tax on land made the peasants quit farming and destroyed the incentives to make land cultivatable or fertile.²³⁾ Second, the peasants were very poor because bad harvest had persisted for a long time. In addition, the exploitation by and corruption of bureaucrats had made the people poorer. Many government officials kept tax revenue in their pockets for their private uses.²⁴⁾ Thus the tax revenue was very low although

22) The *kyul* is a measurement unit of land for taxation purpose, not for arable land. One *kyul* is equal to approximately 3,000 to 12,000 *p'yong*, depending upon the fertility of soil. Here the *p'yong* is a measurement unit of arable land in Korea. One hectare is equivalent to 3,024.8 *p'yong*. See Lee (1996), p. 118.

23) See Kim (1984), p. 370.

24) In many places of her book, Bishop (1894) showed that exploitation by and corruption of government officials were widespread over the country.

tax rate was very high. Third, the grain loan for the poor people, especially the peasants, was implicitly used as a tax in the latter half of the dynasty although it was initially established as a welfare program in its earlier period. Interest rate for grain loan was so high that nobody would like to borrow it from the government. Then it coercively lent grain to the peasants and charged a high interest. Interest payments were actually used for filling the government budget deficits. In fact, approximately 40 percent of total government revenue came from the grain loan in the latter half of the dynasty.²⁵⁾ Fourth, the use of ever-normal cash as a means of payment had some impact on the tax revenue. It promoted the development of service industries including commerce and finance, wholesaling, warehousing, and transportation, whereas agriculture, the main industry in the first half of the dynasty, declined. The development of service industry made tax revenue get smaller because tax was mainly imposed on agricultural sector that was declining, and because many service industries were tax-exempted. In other words, the structure of the economy was changing whereas the tax system was not well adjusting to such a shift. Fifth, the number of ruling class, who did not pay any tax and did expropriate the ruled, was increasing as the government sold special privileges of the ruling class to the public. Anyone could be a member of the ruling class if he paid a certain amount of money to the government. For example,

25) See Kim (1984), pp. 48–49.

Table 2 shows the change in the number of households according to their social class in a local region. The number of Sangmin and *Nobi* households, which paid taxes, drastically decreased to 34 percent in 1867 from approximately 74 percent in 1729 in the region. Sixth, collapse of political and social system made productivity of the economy so low that tax base was getting smaller.²⁶⁾ In addition, potentials for tax payments were drastically drained because the government coercively assigned a part of construction costs of *Kyongbok* palace to the people. Seventh, a great portion of property such as land was owned by the government, local community, and a small number of the ruling class. Private properties of the ruled comprised relatively a small portion of arable land and were not well protected. Rather, they were predated by the ruling class including government officials. In local areas, some members of the ruling class often took over peasants' properties without any compensation. For example, the peasants could not even keep precious things since the ruling class deprived them of their assets with no compensation.²⁷⁾ Moreover, a large portion of cultivatable land, owned by the ruling class, was tax-exempted. Sharecroppers cultivated the land, but the rent on the sharecropped land was so high that they always remained at the subsistence level. Therefore, they did not have

26) The period during which Taewongun was in power was a transition period. Many upheavals and strikes against the dynasty and the society's institutions often occurred in the 1860s.

27) See Bishop (1894), translated into Korean (1994), pp. 101, 126.

any potentials for additional taxes. The institutional failures were serious enough to make the economy stagnate for a long time. In short, many factors caused tax base and revenue to get smaller and made potential for tax payments drain.

Table 2. Change in the Number of Households According to Social Class
(unit: %)

year	Yangban	Sangmin	Nobi	Sum
1729	26.29	59.78	13.93	100
1765	40.98	57.01	2.00	100
1804	53.47	45.61	0.92	100
1867	65.48	33.96	0.56	100

Source: Ko, Tong-Hwan (1996), p. 19.

Notes: 1. Yangban was the class of noblemen who had some privileges in the dynasty. Sangmin was the general public. *Nobi* was the lowest class, very similar to the slavery.

Government's meddling with money in terms of debasement and minting of 100-cash of the late Chosun dynasty is very similar to those of many other countries. Debasement was frequently employed to get seigniorage revenue in almost every European country in the Middle Age.²⁸⁾ For instance, in 1200, the French *livre tournois* was defined at ninety-eight grams of fine silver; by 1600 it was debased to only eleven grams. A more striking case is the *dinar*, a gold coin of the Saracens in Spain. The weight of the original *dinar* was sixty five gold grains at the end of the seventh century. By the mid-twelfth

28) For more details of debasement, see Groseclose (1961), pp. 57-76 and Rothbard (1963), pp. 63-64.

century, the *dinar* was still sixty grains. It was soon debased to fourteen grains by the early thirteenth century. Then it was converted into a silver coin, weighing twenty six grains of silver. By the mid-fifteenth century, the *dinar*, then called *maravedí*, was debased again to only one and half grains of silver. Feavearyear (1963) shows that occasional debasement of pound sterling of the United Kingdom led to a permanent disjunction between the formal pound sterling and its original weight.²⁹⁾

In summary, the Chosun dynasty in the 1860s faced ever increasing demand for fiscal expenditure while tax revenue did decrease or did not increase at least. The Taewongun administration took an easy way to secure increased seigniorage revenue; debasement of currency and minting of 100-cash. It filled the government expenditure gap through monetization by minting *tangbaekchon*. To do so, the government seized a monopoly position in the minting business although private coinage illegally continued.

IV. MONEY SUPPLY, PRICE LEVEL AND SEIGNIORAGE

As shown in Table 3, total supply of 100-cash had dramatically increased to 16,000,000 *yang* for a short period of only six months until June 16, 1867.³⁰⁾ It is approximately

29) See Feavearyear (1963).

30) If we add private counterfeit, total amount of 100-cash should be greater than this figure. Because it is unknown, however, total stock of coins minted

three times the total amount coined during the period 1807 to 1857. Also it comprised approximately a half of total stock of coins minted until then. The state council reported on November 7, 1867 a rapid rise in commodity prices. For example, the price of rice was 7–8 *yang* per *sok* in December 1866. It soared to 44–45 *yang* per *sok* in about two years. It went up by approximately 600 percent for such a short period of two years. Compared to 200 percent increase in the price of rice for 188 years from 1678 to 1866, this magnitude must be remarkably high. The monthly rate of inflation, measured in terms of rice price, is estimated to be 7.3 – 7.5 percent.³¹⁾ As a result, the government had to withdraw 100–cash from circulation. The government exchanged 100–cash for either ever–normal cash or Ch'ing currency. As Friedman (1963) indicated, the current episode confirms that inflation is always and everywhere a monetary phenomenon.

Turning to the government's profits from seigniorage, we see that the profits from minting 100–cash were very high. While the profit rates were around 50 percent during the period 1679 to 1731, those were, as given in Table 3, 10 percent during the period 1814 to 1825, and 24 percent in 1857. In Table 3, the “year” refers to the year when a series of minting operation ended. The profit is the difference between the total nominal

by the government is used as the statistic for the total stock of money.

31) It is unfortunate for us to be unable to investigate a monetary dynamics of inflation. The detailed data on monthly rate of inflation and the supply of 100–cash are not available.

value obtained and its total cost incurred from a series of minting operation. Note that both Won (1971) and Palais (1975) defined the profit rate as the ratio of the total profit to the total revenue.³²⁾ We think, however, that it would be more reasonable to redefine it as the ratio of the total profit to the total cost. The numbers in parentheses of Table 3 are profit rates recalculated by our definition.

Table 3. Coin Supply and Profit Rate (unit: *yang*, %)

year	coin supply	Profit rate
1807	300,000	12 (13.6)
1814	326,400	10 (11.1)
1825	367,500	10 (11.1)
1830	733,600	27 (37.0)
1832	784,300	27 (37.0)
1855	1,571,500	20 (25.0)
1857	916,800	24 (31.6)
sub-total	5,000,100	NA
1816 - 1863	4,373,700	NA
1866. 12. - 1867. 6.	16,000,000	NA

Source: Won, Yu-Han, "Chosunhugi Hwapye Chongchaekwanhan Yongu" [A Study on the Monetary Policy in the Second Half of the Chosun Dynasty], Hankooksayongu, 1971, pp. 287-313.

The "year" refers to the year when a series of minting operation ended. The profit rates in parentheses are ones recalculated as the ratio of the total profit to the total cost.

Before the year 1867 when 100-cash was newly introduced, the profit rate went up and down depending upon the availability of, and thus the prices of, the raw material, especially copper used for minting coins. If the price of copper

32) Their primary source of data is *ilsongrok*.

rose due to an excess demand for it, the profit rate fell, and vice versa. As mentioned earlier, 16,000,000 *yang* of 100-cash was minted for six months. The metallic content of 100-cash was only five or six times that of ever-normal cash while its face value was one hundred times the par value of ever-normal cash. Therefore, the face value of 100-cash was approximately seventeen to twenty times higher than its intrinsic metallic value. The government minted huge amounts of 100-cash for a very short period of time so that the price of copper seemed to rise rapidly, thereby increasing total cost. In addition, whether debasement was anticipated should be considered to calculate seigniorage revenue.³³⁾ The current case is the unanticipated debasement because the government had not debased the currency since 1757. Moreover, private minting must have caused the price of copper to rise higher than without it. To figure out the amount of seigniorage revenue, such an increase in copper prices should be taken into account. Considering such factors, we can approximately calculate the size of total revenue in terms of rice, but not from the magnitude of total costs of minting 100-cash, because the data on the prices of copper are unavailable. The real purchasing power of 16,000,000 *yang* of 100-cash amounted to 2,000,000 *sok* of rice if the price of rice is assumed 8 *yang* per *sok*, prevailed in January 1687, and to 363,000 *sok* once the rice price is assumed 44 *yang* a *sok*. It is estimated that real purchasing

33) See Bordo (1986).

power of seigniorage revenue would be much less than 2,000,000 *sok* and higher than 363,000 *sok* of rice. It is evident the Taewongun administration collected a lot of seigniorage from increasing the outstanding quantity of the large currency.

V. GRESHAM'S LAW

The conventional versions of Gresham's law predict that, when an official fixed exchange rate is imposed on two economically distinct monies, the cheap (overvalued) money drives the dear (undervalued) money out of circulation.³⁴⁾ Yet, this proposition was challenged by Rolnick and Webber (1986). They claimed that the bad money never drives the good out of circulation. Rather, both monies circulate side by side, driving the good money to a premium. They demonstrated that neither liberal coinage policy nor legal-tender law fixed the exchange rate between the two monies, and doubted that such a fixed rate could ever be sustained. They offered an alternative explanation that a significant transaction cost of using the good money at a nonpar price is required for the Gresham's law to operate. For example, if costs of paying a premium for a small-denomination currency are not negligible, the public would be better off accumulating small-denomination currency and using it in large volume of transaction. Under this situation, the good money would be more or less driven out of

34) See, for example, Friedman and Schwarz (1963), p. 27, n. 16.

circulation. Thus the size of denomination will determine the fate of the good money. In general, par money drives nonpar money out of circulation if market-based transaction costs of nonpar exchange are not negligible.

Selgin (1996) argued that Gresham's law would still operate owing to a variety of legal-tender laws although Rolnick and Webber's law is often valid and useful. A vigorously enforced legal-tender law makes Gresham's law be at work by placing both the buyers and sellers in a "Prisoner's Dilemma," resulting in the use of cheap money as a noncorporative equilibrium. Certain kinds of legal-tender laws certainly give a favor to bad money over good. Such laws put Gresham's law into effect, not by making the fixed rate sustained, but by making it costly or at least risky for sellers to deny accepting bad money from buyers. Furthermore, he claimed legal-tender law makes Gresham's law operative regardless of actual existence of a fixed exchange equivalence between the good and bad money. He showed a few monetary episodes supporting his argument in the United States and the United Kingdom. Greenfield and Rockoff (1995) also examined several monetary episodes, confirming that Rolnick and Webber's explanation is not supported.

In the current episode, Gresham's law was operative. As described in the previous section, the ever-normal cash had been the legal-tender since 1678. The state council declared a new legal-tender law on January 7 1867, eight days before

100-cash was about to circulate, that ever-normal cash and 100-cash should be accepted in payments for all official and private transactions. In addition, the council ordered the public to make payments to official agencies in a ratio of two thirds 100-cash to one third ever-normal cash, expecting both currencies to be put back into circulation. Soon after the legal-tender law was activated, the state council reported on July 4 that new 100-cash drove the old cash out of the marketplace. This is an official report on Gresham's law.

The vigorously enforced legal-tender law came into play when the general public was reluctant to circulate 100-cash because of its serious inflationary effects. As the public did not want to use 100-cash as a medium of exchange, Taewongun ordered that henceforth all payments including taxes to official agencies must be made exclusively in 100-cash. Also the regulation came into effect that all private commercial transactions involving payments of one *yang* or more should be made in 100-cash, and those involving amounts of less than one *yang* in the old cash.³⁵⁾ In addition, any local government officials found accepting tax payments in ever-normal cash and sending them in 100-cash to the central government were punished as criminals. Thus the legal-tender law became more strictly enforced. Although anyone found hoarding ever-normal cash was summoned to the palace and told to put it back into circulation, the legal-tender law appeared to systematically

35) See Palais (1975), p. 172 for details.

favor the bad money, the 100-cash. The general public had to observe the legal-tender law. Thus the Rolnick and Webber's law did not seem to be able to work under this situation. In addition, there was not a fixed exchange rate strictly imposed between the two economically distinct monies. The public might be able to accumulate the small-denomination (one *pun* or one hundredth of one *yang*) ever-normal cash, but they could not use them in large scale payments simply because it was illegal or very costly. Therefore, the two monies did not circulate together.

This phenomenon might be interpreted as follows. As Coase (1937) noticed, transaction costs include information costs and the costs of finding, negotiating, and concluding a separate contract for each exchange transaction. A strictly enforced legal-tender law would give rise to significant transaction costs through a legal sanction to the general public when they want to use the good money at a premium. In other words, high transaction costs of using the good money at a premium would make certain kinds of transactions not happen or blocked. In the current episode, the legal-tender law heavily raised transaction costs, far exceeding the market-based transaction costs of Rolnick and Webber. If these costs are significantly high to discourage people from using accumulated ever-normal cash in large volume of transaction, then ever-normal cash will be driven out from circulation. This is what happened in the current episode. In this sense, Selgin's argument is not a

substitute for the Rolnick and Webber's, but a complement.

In addition, total outstanding quantity of ever-normal cash by the year of 1866 was estimated 15,000,000 *yang* which was comparable to that of 100-cash. Therefore, ever-normal cash (the good money) did not appear more prominent than 100-cash (the bad money) in its quantity outstanding. The supply of bad money was not limited. Were it limited, 100-cash would be kept as a subsidiary currency as in the case of Bland dollar in the U.S. monetary history, and ever-normal cash would continue to circulate.³⁶⁾ This implies that disappearance of ever-normal cash from the marketplace was due to Gresham's law.

Finally, note that the Taewongun administration officially withdrew 100-cash from circulation because of its inflationary effect. It took every necessary measure to underline its confidence in 100-cash. However, it was all to no avail. The 100-cash gradually disappeared from the marketplace and was substituted by ever-normal cash, which is reverse of Gresham's law. It might be termed as “Thiers' law.” This phenomenon is very similar to the episode of Ming China to which Bernholz (1997) applied the inflationary cycle theory. The good money will return to marketplace in the final phase of the cycle whereas Gresham's law will be at work in its third phase.

However, we doubt that inflationary effect was the sole

36) See, for example, Greenfield and Rockoff (1995)

reason for 100-cash to disappear from the marketplace. The 100-cash was too large in denomination for the general public to use in the usual daily transactions. The price of rice, for example, ranged from 3 *yang* and 5 *chon* to 5 *yang* per *sok* right before 100-cash was introduced into circulation although it differed from region to region.³⁷⁾ It was 7 to 8 *yang* when 100-cash began to circulate. It should be reasonable to assume that the public was not rich enough to afford to purchase rice in a *sok* or so, but in a far smaller amount of it. Remember the 100-cash is equivalent in nominal value to one *yang*. This implies that 100-cash was too large to be used in the daily life of the public. Under the Taewongun administration, one-day expenses, for example, for a business trip of junior officials were 6 *yang* and 3 *chon*: 2 *yang* for meals, 1 *yang* and 4 *chon* for horse renting, 2 *yang* and 9 *chon* for boarding.³⁸⁾ Large amounts of small-denomination currency, ever-normal cash, seemed to be needed to clear the transactions involving amounts of less than one *yang*. This should have helped 100-cash disappear from circulation.

In this respect, Mises' expectation theory that human forms expectation of future based on specific understanding of historical principle may help explain the withdrawal of the 100-cash from the marketplace. In the study of German hyperinflation, Mises (1932) noted that people's expectation of

37) Kim (1984), p. 353.

38) Yoo (1974), p. 499-500.

inflation changed from ‘inelastic’ in the early stage of inflation through ‘adaptive’ in the intermediate stage and to ‘rational’ expectation in the final stage. In this episode, as people recognized the inflationary effect of an increase in the supply of the 100-cash, the 100-cash was gradually driven from the marketplace and the ever-normal cash returned.³⁹⁾ Although we cannot clearly show that people’s expectation changed in the above-mentioned way because of unavailability of data, we are pretty sure that people did make rational expectation in the final stage of the inflation where the ever-normal cash returned to the marketplace.

VI. CONCUUDING SUMMARY

In the late Chosun dynasty in Korea, the government faced ever increasing demand for fiscal expenditure while the tax revenue did decrease or did not increase. The dynasty debased ever-normal cash three times to gain seigniorage revenue since 1678. An increase in its quantity with debasement was not sufficient to fill the expenditure gap. Thus the Taewongun administration of 1867 monetized the government budget deficits by introducing 100-cash called *tangbaekchon*, thereby collecting a lot of seigniorage revenue. This implies that the government began actively to meddle with money as in many other countries. Also the meddling process was much the same.

39) See, on this point for detail, Jeon (2015).

Total supply of 100-cash amounted to 16,000,000 *yang* for such a short period of only six months, which resulted in a high monthly rate of inflation, about 7.5 percent. The privately minted coins should have helped raise the commodity prices further. The conventional wisdom is confirmed in this episode that inflation is always and everywhere a monetary phenomenon.

Gresham's law came into effective owing to the strictly enforced legal-tender law which systematically favored the bad money, the 100-cash. Thus, Gresham's law was operative in the third phase of the inflationary cycle with Thiers' law operating in its final phase as in the case of Ming China. The 100-cash was substituted by ever-normal cash because of its inflationary effect and too large-denomination for the daily transactions of the general public. Mises' expectation theory of inflation could help explain this episode.

An important implication to be established is that the government meddling with money gives rise to a formidably undesirable outcome, although it is not confined to this episode. Monetary policies in the latter half of the Chosun dynasty in Korea resulted in a severe disorder of the country, which accelerated the demise of feudalism and the dynasty.

The limitation of the study obviously stems from unavailability of time series data, especially on the monthly supply of 100-cash and inflation rate during the period under investigation. The very limited availability of the data makes a


more systematic analysis of monetary dynamics impossible.

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 국문초록

화폐 이야기: 조선의 당백전

김영용 · 전용덕

조선 왕조의 후반기에는 금속화폐의 가치변조로 얻을 수 있는 주조 차익 만으로는 증가하는 재정지출을 충당할 수 없었다. 이에 조선 왕조는 더 많은 주조 차익을 얻기 위해 당백전을 발행, 유통하였다. 이로부터 본 연구에서 발견한 사항은 다음과 같다. 첫째, 조선 왕조가 화폐 발행에 개입한 상황은 다른 나라의 경험과 매우 유사하다. 둘째, 인플레이션은 언제 어디서나 화폐적 현상이다. 당백전 발행에 따른 월 평균 인플레이션율은 7.3-7.5%에 달하였다. 셋째, 법화 지정 법률에 의해 그레삼의 법칙이 작동했다. 마지막으로 당백전의 공급 증가에 따른 인플레이션으로 말미암아 당백전은 화폐로서의 기능을 상실하고 시장에서 퇴출되었다.

주제어: 조선 왕조, 당백전, 상평통보, 가치 변조, 주조 차익, 인플레이션, 그레삼의 법칙