



Paper Money—A Cycle in Cathay

Author(s): Gordon Tullock

Source: *The Economic History Review*, New Series, Vol. 9, No. 3, (1957), pp. 393-407

Published by: Blackwell Publishing on behalf of the Economic History Society

Stable URL: <http://www.jstor.org/stable/2591131>

Accessed: 09/06/2008 15:30

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=black>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit organization founded in 1995 to build trusted digital archives for scholarship. We enable the scholarly community to preserve their work and the materials they rely upon, and to build a common research platform that promotes the discovery and use of these resources. For more information about JSTOR, please contact support@jstor.org.

THE ECONOMIC HISTORY REVIEW

SECOND SERIES, VOL. IX, No. 3

1957

PAPER MONEY—A CYCLE IN CATHAY

By GORDON TULLOCK

IN the twelfth and thirteenth centuries the Mongols overran most of the then known world. As a result, a firm and efficient government was established across the breadth of Asia and it became possible for European merchants and missionaries to travel to Peking. Nothing seems to have impressed the numerous travellers who took advantage of this opportunity more than the fact that the inhabitants of 'Cathay' (the Chinese portion of the domains of the Great Khan) used paper money.¹

Marco Polo included a chapter on the use of paper money in 'Cathay' in his book:

In this city of Kanbalu [Cambulac-Peking] is the mint of the Great Khan who may truly be said to possess the secret of the alchemists, as he has the art of producing money by the following process.

He causes the bark to be stripped from those mulberry trees the leaves of which are used for feeding silk-worms, and takes from it that thin inner rind which lies between the coarser bark and the wood of the tree. This being steeped, and afterwards pounded in a mortar, until reduced to a pulp, is made into paper, resembling in substance, that which is manufactured from cotton, but quite

¹ The bulk of these travellers, of course, left no written record, but, of those who did, almost all mention this peculiar custom. Friar Odoric of Portenone, William of Rubriquis, Hayton the Armenian, Josepha Barbaro, Ibn Battuta (who started his travels in Morocco rather than Europe), the Archbishop of Soltania (tentatively identified as John de Cora of the Dominican Order), and Hajji Mohammed, the rhubarb merchant whom M. Giov. Battista Ramusio, Ambassador of the Serene Republic of Venice, met at dinner in Constantinople, all mention the matter. Francis Peglotti, an agent of the great Florentine house of Bardi, discussed the use of paper money in China in the China trade section of a sort of commercial geography he wrote. John of Montecorvino, first Archbishop of Cambulac, however, does not mention the subject. Whether this is due to his generally saintly character and disdain for earthly goods or to the fact that we have only a few pages from his pen is an open question. (Cf. W. W. Rockhill (tr. and ed.), *The Journey of William of Rubriquis in the Eastern Parts of the World* (1900), p. 329; annotated translations of the accounts of the other travellers mentioned above will be found in Sir Henry Yule, *Cathay and the Way Thither* as revised by Henri Cordier (1913-16). Their references to paper money occur on the following pages: vol. i. Hayton, p. 259, Hajji Mohammed, p. 296; vol. ii, Odoric, p. 240; vol. iii, the Archbishop of Soltania, p. 91; Peglotti, pp. 97 and 154-5, John of Montecorvino, pp. 1-28; vol. iv, Ibn Battuta, p. 112.)

black.¹ When ready for use, he has it cut into pieces of money of different sizes, nearly square, but somewhat longer than they are wide. Of these, the smallest pass for a half tournois; the next size for a Venetian silver groat; others for two, five, and ten groats; others for one, two, three, and as far as ten bezants of gold. The coinage of this paper money is authenticated with as much form and ceremony as if it were actually of pure gold or silver; for to each note a number of officers, specially appointed, not only subscribe their names, but affix their seals also. When this has been regularly done by the whole of them, the principal officer, appointed by his Majesty, having dipped into vermilion the royal seal committed to his custody, stamps with it the piece of paper, so that the form of the seal tinged with the vermilion remains impressed upon it. In this way it receives full authenticity as current money, and the act of counterfeiting is punished as a capital offense.

When thus coined in large quantities, this paper currency is circulated in every part of the Great Khan's dominions; nor dares any person, at the peril of his life, refuse to accept it in payment. All his subjects receive it without hesitation because, wherever their business may call them, they can dispose of it again in the purchase of merchandise they may require; such as pearls, jewels, gold, or silver. With it, in short, every article may be procured.

Several times in the course of the year, large caravans of merchants arrive with such articles as have just been mentioned together with gold tissues, which they lay before the Great Khan. He thereupon calls together twelve experienced and skillful persons, selected for this purpose, whom he commands to examine the articles with great care, and to fix the value at which they should be purchased. Upon the sum at which they have been thus conscientiously appraised he allows a reasonable profit, and immediately pays for them with this paper. To this the owners can have no objection, because, as has been observed, it answers the purposes of their own disbursements; and even though they should be inhabitants of a country where this kind of money is not current, they invest the amount in other articles of merchandise suited to their own markets.

When any persons happen to be possessed of paper money which from long use has become damaged, they carry it to the mint, where, upon the payment of only 3%, they receive fresh notes in exchange. Should any be desirous of procuring gold or silver for the purposes of manufacture, such as of drinking-cups, girdles, or other articles wrought of these metals, they in like manner apply to the mint, and for their paper obtain the bullion they require.

All his Majesty's armies are paid with this currency, which is to them of the same value as if it were gold or silver. Upon these grounds, it may certainly be affirmed that the Great Khan has a more extensive command of treasure than any other sovereign in the Universe.²

It will be noted that Po-lo, the Assessor (as he appears in the Chinese histories), thinks of the printing of paper money simply as an efficient way of getting money for the government; he is unaware of the other problems raised by a continuous inflation. Indeed, he does not even mention the year by year decline in the value of the paper currency during the period he spent in the service of the Great Khan. Probably Polo thought of this as a minor matter to be met by expansion of the printing department.

The Chinese have tended to be less impressed with paper currency than were

¹ The surviving specimens of paper money from this period are varying shades of dirty grey. It is not possible to determine their exact original colour, but they cannot have been black since they are printed in black ink. As a general rule, Polo was remarkably accurate, but even Homer nods. A. M. Davis, *Certain Old Chinese Notes* (Boston, 1915), contains an excellent collection of reproductions of Chinese notes from the period of this study. Morse also reproduces several notes and Vissering one.

² Manuel Komroff (ed.), *The Travels of Marco Polo* (New York, 1926), pp. 156-8.

the foreigners from what was then a backward part of the world. Since paper, ink, and printing were all invented in China, it is not surprising that paper currency also first appeared there. The history of paper money in old China stretches over a millennium, from the ninth to the nineteenth century.¹ Its greatest development, however, was during the period between A.D. 1000 and 1500. The few economists who have discussed the history of paper money in China have treated it as a single story of the rise and fall of this institution.² There is a sense in which one can speak of the developments in China as a single cycle, but in fact, the history of paper money in China covers seven dynasties, each with its own monetary institutions. In addition, the province of Szechuan had its own currency system. Unfortunately, our information on these eight currency systems is sadly lacking in many respects.³ Information is so scarce, in fact, that this article contains practically everything that is known on its subject and is still only a rather bare outline of developments.

Before discussing the history in detail, however, something in the nature of a road map is desirable.⁴ The first step in the development of paper money in China was a long period during which the people and government gradually became accustomed to the use of paper money. By the eleventh century this process had proceeded to the point where it was possible for the succeeding governments to establish inconvertible currencies and use inflation for budgetary purposes.⁵ All of the governments in China between 1100 and 1500 succumbed

¹ For reasons which are unclear to me, most Chinese historians begin their historical account of paper money in China almost 1000 years earlier with the 'deerskin money' of the Han. The Han 'deerskin money' system, which lasted only a short time and had no effect on the later development of real paper money, was a peculiar form of taxation invented by one of the least distinguished emperors of the Han dynasty. Pieces of deerskin upon which had been inscribed phrases reminiscent of those usually found on currency were distributed by what amounted to a compulsory sale to various wealthy persons. There is no evidence that they ever circulated (most of the 'notes' were in extremely large denominations) or performed any of the functions of money.

² W. S. Jevons, *Money and the Mechanism of Exchange* (1875), p. 198; H. D. Macleod, *Dictionary of Political Economy* (1863), pp. 667-71. Jevons' account is not only oversimplified, it is inaccurate. He commits the gaffe of using Sir John Mandeville to expand on Polo's account. In the late Middle Ages, Mandeville's book was the most widely read account of the east. Long before Jevons' time, however, scholars had realized that Sir John was a liar. See Hugh Murray, *Historical Account of Discoveries and Travels in Asia* (Edinburgh, 1820), I, 193-7.

³ A number of historians, both western and Chinese, have worked on the history of money in China. The most recent and most comprehensive study of Chinese paper money is contained in Lien-sheng Yang (subsequently referred to as Yang), *Money and Credit in China* (Cambridge, Mass., 1952). Most of these historians, however, have had little or no knowledge of economic theory and have confined themselves to the bare assemblage of data. Dr Yang is an economist, but devotes most of his attention to the fascinating (to a Chinese historian) and fantastically difficult philological problems of determining what the Chinese historical texts really mean. This article attempts to place the facts assembled with such diligence by the historians in their proper economic context and to point out certain implications for general monetary theory suggested by the Chinese experience.

⁴ Since this article is written for economists, I have confined myself to the strictly monetary history, giving only such background information as is absolutely necessary for the understanding of monetary developments.

⁵ The necessity of a lengthy indoctrination in the use of paper money before an inflationary policy becomes possible can be illustrated by an incident which occurred during the Mongol dynasty. The Mongol Ilkhans in Persia, impressed by the use of paper money by their suzerain in China, decided to use the same device themselves. Technical advisers were sent from Peking, and an elaborate organization was set up. The Persians, however, had not been accustomed to the use of paper currency by several hundred years of gradual developments. They simply refused to believe that these nicely printed pieces of paper were worth anything, and the experiment was a failure.

to this temptation, and their monetary histories have a strong family resemblance. In each case there was a period of inflation, usually quite a long one. Except in the case of the Southern Sung dynasty, which was conquered by the Mongols before the evolution was completed, the use of paper money was, in each case, eventually abandoned. This abandonment of the use of paper currency is the most interesting feature of the history of paper money in China and will be discussed at some length after the historical evidence has been presented. After 1500, the governments of China no longer issued paper money on any significant scale. It is interesting to note, however, that private bank notes were issued on a considerable scale in the centuries after the government ceased printing currency. Eventually, of course, paper money was brought back to China as part of the westernization process in the nineteenth and twentieth centuries.

By A.D. 700–800 there were shops in China which would accept valuables, and, for a fee, keep them safe. They would honour drafts drawn on the items in deposit, and, as with the goldsmith's shops in Europe, their deposit receipts gradually began to circulate as money. It is not known how rapidly this process developed, but by A.D. 1000 there were apparently a number of firms in China which issued regular printed notes and which had discovered that they could circulate more notes than the amount of valuables they had on deposit.

At about the same time, the Chinese government was developing another type of pre-money. In order to maintain the court and army, large amounts of tax receipts had to be remitted from the provinces to the capital. To avoid physically transporting the money, the provincial governments set up offices in the capital which sold drafts payable in the provincial capitals. Apparently some private firms were also involved in this business, which closely resembles the type of banking which made the Fuggers wealthy in Europe. In 811 the government prohibited private operators, and in 812 the central government established its own system. The drafts on the provincial governments which were sold in the capital (called 'flying money') are considered by the Chinese historians to be the origin of paper money in China. In Europe also, central government treasuries, at the time when paper money was developing, frequently issued drafts on local tax collection agencies.¹ Thus, when paper money was beginning to develop, there were both public and private drafts in circulation in both Europe and China. It is interesting that money developed out of the private drafts in Europe and out of government drafts in China.

The Tang dynasty, which had ruled China since the seventh century, fell in 907. In most of China it was replaced by the Northern Sung which was established (after the customary period of confusion) in 960. Within ten years of its establishment, the Northern Sung had founded a 'bureau of credit cash' which issued drafts totalling one to three million 'strings'² per year. There were also private drafts to an unknown amount circulating during this period, and the various local and provincial governments issued considerable numbers of commodity certificates based on salt, tea, and other commodities.³ The importance of money, both paper and metallic, was growing rapidly during the Sung, a

¹ For an account of the system in England, see Sir John Craig, *A History of Red Tape* (1955), p. 26.

² The 'string' was literally a string upon which, theoretically, 1000 copper cash had been threaded. (This custom is the reason for the hole in the middle of Chinese coins.) The actual number of copper cash on the string was fixed by custom and law and varied from time to time and from place to place. The size of the standard copper coin was also occasionally changed and the value of copper varied significantly from time to time.

³ W. Vissering, *On Chinese Currency* (Leiden, 1877), p. 212 (subsequently referred to as Vissering).

period in which commerce rapidly expanded. Government taxes, for example, were collected over 80 per cent in kind in A.D. 1000, but by 1050 the share collected in kind had shrunk to less than 50 per cent.

A tabloid history of China for the next few centuries is necessary as a background for the history of paper money there. Northern Sung was ended by a barbarian invasion. The barbarians established the Chin dynasty in the north, and a cadet of the Sung imperial house established the Southern Sung in the south. In the latter half of the thirteenth century still another group of barbarians, the Mongols, destroyed both the Chin and the Southern Sung. In the mid-fourteenth century they were driven out, and a native dynasty, the Ming, was established. Ming, in its turn, was replaced by Ch'ing in the seventeenth century.

The great province of Szechuan has always been somewhat of a law unto itself, and, during the Northern Sung period, it developed a paper currency of its own which lasted almost to the end of Southern Sung. Iron currency had earlier come into use in Szechuan. Since this currency circulated at approximately its metallic value, it was excessively cumbersome. As a result, private bank notes seem to have developed more rapidly there. About A.D. 1000 a provincial government decree restricted the issue of such notes to a group of sixteen merchant houses, who were permitted to charge a fee of 3 per cent for this service. The merchants did not always redeem the notes promptly. Any reasonably cynical observer would suspect that the 'squeezing' of the officials was a major factor in the merchant's difficulties. The officials, however, did not take this view, and in the early part of the eleventh century, the government took over the issue itself.

The system under which the Szechuan currency was issued was rather different from any European system. Each year a fixed quota of currency was issued. This quota had to be redeemed in new notes in the third year. As long as the quota was not increased, the issuing authority profited only to the extent of 'seignorage' and of those notes which were accidentally destroyed and therefore not presented for redemption. There does not seem to be any available information on the origins of this system. Possibly it was first established as a governmental regulation for private bankers and then continued when the government took over the issuing privilege. At any event, this system became the Chinese equivalent of the gold standard; by putting a limit on the number of notes which could be printed, it prevented the government from indulging in inflation.

In 1072 the Szechuan provincial government 'went off the gold standard' by running off a second series of 1071 notes to repay the 1069 notes which were up for redemption, thus reserving the 1072 issue for other, more immediately useful purposes. This seems to have inaugurated a period of inflation in which yearly issues were enlarged and redemption dates frequently missed. In 1098 a decree set the yearly quota about 50 per cent higher than the 1072 quota, but actual printings seem to have been considerably higher. In 1107 the total of outstanding notes was equivalent to fourteen years' issue at the legal quota. By 1200 the note issue had again doubled. By that date the Szechuan provincial currency was passing out of use. Circulation appears to have ceased completely some time before the Mongol conquest.

It is interesting to note that, during the Szechuan inflation, unredeemed earlier issues were sometimes worth only one-fourth of the new issues. Speaking generally, the great advantage of a paper currency inflation over the more primitive debasement of a metallic currency lies in the fact that the newly printed paper notes are the same as the ones already in circulation. A new coin

containing less metal (or less valuable metal) is obviously worth less than the older coinage and legal efforts to make the two equivalent will merely bring on the effect discovered by Gresham. If, however, there are ten units of paper currency in existence and the government prints an eleventh, all eleven are worth 0.9 of the value of the original notes. All the currency, the old and new, is equally debased. Since the government holds the new note and the people the other ten, this is obviously an advantage to the government. In Szechuan, however, the government succeeded in doing even better than this. The newly printed notes which it issued were valued more highly than the old notes already in private hands. This was presumably the result of the system of periodic redemption. The Szechuanese may have felt that a government promise which had already been broken was worth less than one which would probably be broken in the future.¹

Outside of Szechuan, however, the development of paper money was less rapid. Turning first to Southern Sung, in 1136 the government made an unsuccessful effort to circulate notes in the capital city. By the middle of the century, private agencies were issuing notes which circulated in the neighbourhood of the capital. In 1160 the government forbade their further circulation and began issuing its own paper currency (successfully, this time). In 1166 an effort was made to circulate paper notes in the frontier region of the Huai valley, and in 1168 a formal system for issuing paper money was established. The period of circulation was fixed at three years, and a quota of 10,000,000 strings per year was established. This would mean that a total of about 30,000,000 strings would be in circulation at one time. In practice, of course, the government soon turned to meeting fiscal deficits by expanding the currency issue. In 1176 certain issues were 'permitted' to circulate for six to nine years. In 1195 the yearly quota was raised to 30,000,000 strings. Even this limit was shortly exceeded, however, and in 1209 there were 117,600,000 strings from three years in circulation.

This increase in the number of paper notes in circulation does not appear to have affected their value. Until well into the first decade of the thirteenth century, the paper money remained fairly stable at a value about 10 per cent less than copper in the capital and discounted another 15 per cent in the provinces. The explanation of this phenomenon seems simple. The Chinese historians tell us that during this period the circulation of these notes, at first confined to the immediate environs of the capital, gradually spread until they were used throughout the Empire.² The government was setting a trap for itself, however, by covering a portion of its regular expenditures by expansion

¹ The Chinese, however, take a somewhat irrational attitude toward the valuation of different types of money. When I was in Tientsin in 1948-50, only U.S. five, ten and twenty dollar notes circulated at par with each other. You could get six one dollar notes for one five and two twenties would buy a fifty. The reasons given were that singles were bulky and hard to conceal while there were counterfeit fifties in circulation. Similarly, the 'big head' and 'little head' dollars, the two types of silver dollar in normal circulation, were sold at a fixed percentage difference in price which had no relation with the real difference in silver content. Since all these transactions were illegal, government regulations cannot be the explanation. While all of this is irrational from the standpoint of the whole society, the individual traders, of course, behaved rationally in exchanging the various types of money at the values given by society rather than in terms of 'real value'. Where possible, they engaged in arbitrage.

² The stability of the paper notes at this time may be partially an illusion. The Chinese historians tell us that it remained stable in terms of copper; they do not tell us whether both currencies changed in value with respect to other commodities, however. Logically, if paper currency was replacing a metallic currency, the value of the currency metal would fall because of the reduced demand. If the value of copper was falling during this period, then the paper money, which kept a constant value with respect to copper, must have fallen proportionately.

of the currency supply. Although this expansion might temporarily be matched by the expansion in the use of paper currency, eventually the point would be reached where paper money circulated throughout the empire and any further expansion would cause a decline in the value of money. This dangerous point appears to have been reached in the first decade of the thirteenth century. The Southern Sung chose this delicate moment to launch a war intended to drive the Chin out of north China. The war failed and the value of the Sung paper money went into a decline. By 1232 the notes in circulation had more than tripled and in 1247 notes of unlimited periods of circulation were issued. The continued printing of currency pressed the value of the paper notes down and the gradually deepening shadow of the Mongols along the northern frontier had a further depressing effect. After the Mongols had conquered Sung, they converted the Sung notes into their own paper currency at 50 to one. It is not possible to say whether this conversion rate corresponded with the market value of the two currencies at the time.

Meanwhile, in the north the barbarian dynasty of Chin was also issuing paper currency. In 1153, immediately after moving their capital from Manchuria, they printed their first notes. The Chin currency was remarkable in that there were separate issues for the various geographical areas of the empire. The period of circulation was fixed at seven years and, until 1190, the notes were regularly retired when they came due and the fixed quota of notes was strictly adhered to. As a result, the value of the paper currency remained stable. In 1190 a new Emperor abolished the period of circulation and the expansion of the currency issue with a concomitant fall in value began. The inflation does not appear to have been very great at first. Provided the printing quota was retained, as it probably was for the first few years, the increase in currency each year would have been one-seventh or less of the amount in circulation.

Various measures were taken to prevent too rapid depreciation of the currency. In 1192 the Emperor decreed that the amount of paper in circulation was not to exceed that of copper cash. In 1193 certain taxes previously paid in copper were ordered to be paid in paper. In 1197 the government began an obscurely motivated experiment in silver coinage. Silver ingots were cast and circulated along with the paper notes. One ounce¹ of silver was decreed to be worth two strings of copper cash. Apparently both the silver money and the paper currency were over-valued as against copper² and Gresham's law began to operate; the government found it necessary to prohibit hoarding or export of copper coins. Other, more realistic measures were taken. Certain taxes were made payable in notes and silver and, in Manchuria, a law was passed requiring all transactions involving more than one string to be made in silver and notes. From this time forward we will encounter more and more administrative measures designed to eliminate types of money which compete with the official currency. In 1200 the issue of silver currency was discontinued, allegedly because of counterfeiting, but probably because the supply of silver was more limited than that of paper. In 1203 local note issues put out by city governments which had apparently gained considerable popularity were abolished.

All of the above measures, except the initial issuance of silver currency, were obviously aimed at increasing the demand for paper currency. Any effect they may have had, however, was more than cancelled out by the activities of the government mint. The government, nevertheless, continued its attempts to

¹ The Chinese measure translated 'ounce' is actually a little heavier than our ounce.

² In 1201, silver sold against copper at 20% under its official value.

keep the value of money up while steadily expanding the note issue for revenue purposes. In 1206 efforts were made to withdraw the largest denomination bills; in 1207 it was ordered that certain taxes be paid one-third in large notes and this was later raised to two-thirds.¹ Business transactions of more value than one string were ordered to be made in paper throughout the empire and further regulations were issued to restrict the hoarding and export of coins. Token conversion of small denomination notes into copper was undertaken by the treasury and the small denomination notes of the various geographical areas were permitted to circulate nationally.

None of these measures, however, was enough seriously to counterbalance the steady printing of money. It will be recalled that the currency of the Southern Sung had, at about this time, been seriously affected by the expenses of a military effort to drive the Chin out of China. Defence against this effort was also a blow to the Chin currency. It was at this time, too, that the Mongols began to be a serious menace along the northern border. The Chin, being located between the Southern Sung and Mongolia, were the first to feel the weight of Mongol arms. Under the impact of high military expenditures, Chin paper currency went into a rapid inflation. In 1210 eighty-four cartloads of paper currency were distributed among the troops just before a major defeat by the Mongols. By 1214 the old currency was practically worthless and 20 and 100 string notes were issued. Shortly thereafter, 200 and 1,000 string notes came into circulation. In 1215 a new issue of notes was printed and circulation of copper coins was prohibited. There was also a brief, unsuccessful, experiment in price controls. The new issue of notes depreciated so rapidly that by 1216 they were worth less than 1 per cent of their face value. In 1217 these notes were converted into a new issue at the rate of 1,000 to one. In 1222 this issue was again converted at the rate of 800 to one² which was its current 'black market' value. By the following year the new note had fallen to less than one per cent of its face value. Various other efforts were made to issue new notes in the ten years remaining to the dynasty, but they do not appear to have been successful.

By 1220 silver had replaced copper as the dominant currency metal. And, although there does not seem to be any evidence on the point, it is probable that this shift, in about twenty years, from copper to silver, was directly connected with the government's monetary policy. The various legal prohibitions on the use of copper coins combined with the steady depreciation of the paper notes would naturally lead to the use of any available substitute. Legalistically, it could be argued that transactions involving silver were barter rather than currency transactions; realistically, an ounce of silver is easier to conceal than is the string of 1,000 cash which is its copper equivalent.

When the Mongols first entered north China and overthrew the Chin, they seem to have given little attention to the possibilities of paper currency. By 1260 there were a number of currencies in circulation which had been issued by various governmental units, but the total value was probably small. These notes were silver notes rather than copper notes as previous issues had been and usually had a period of circulation of three years. In 1260, Khubilai Khan ascended the throne, making his former tutor his principal adviser. This man came from

¹ The belief that large denomination bills are somehow more inflationary than small bills totalling the same amount seems to be endemic in China. It was observable in the post-World War Two inflation in China.

² Actually the rate of conversion was 400 to one but the legal value of the new notes was only half of the old.

a family of Chin dynasty officials and it was probably on his advice that Khubilai began the systematic use of the printing press that was to characterize Mongol governmental finance. In any event, in 1260 the various local currencies were called in and redeemed at fair values and a national currency issued. No period of redemption was established, the new notes were to remain in circulation indefinitely. This currency was, I think, historically unique in that its value was legally fixed at one-half its face value. Two one-ounce silver notes were legally worth one ounce of metallic silver.

For the first few years the value of the new currency was well maintained. As in the early days of the Southern Sung currency, apparently the steadily growing volume of money in circulation was matched by the steadily growing demand for the currency as its use spread through the Empire. The government also had very large reserves of gold and silver and, although they seem to have made no use of these reserves to stabilize their currency, the knowledge that they existed may have had a stabilizing effect. In 1262 the use of gold and silver as media of exchange was prohibited. Whether this indicates that the new currency had already begun to slip is not known, but the regulation probably had more practical effect than such rules usually do. The Mongol polity made a modern totalitarian state seem liberal and tolerant. Intermittently throughout the dynasty the project of killing all the Chinese and converting China to pasture land was discussed by the government. The project was never adopted, but a government which could consider it would feel few compunctions about the methods used to enforce its decrees.

Table 1 shows that the rate of issuance of currency rises sharply in the middle 1270's. The very high figure in 1276 is probably accounted for in part by the conversion of Southern Sung currency which was effected that year. It seems

Table 1. *Mongol note issue, 1260-1330**
(100,000 ounces)

Year	First issue	Second issue†	Third issue‡	Cumulative total§
1260	36	—	—	36
1261	19	—	—	55
1262	40	—	—	95
1263	23	—	—	118
1264	44	—	—	162
1265	58	—	—	220
1266	38	—	—	258
1267	54	—	—	312
1268	19	—	—	331
1269	11	—	—	342
1270	48	—	—	390
1271	23	—	—	413
1272	43	—	—	456
1273	55	—	—	511
1274	123	—	—	634
1275	199	—	—	833
1276	709	—	—	1,542
1277	510	—	—	2,052
1278	No data	—	—	—
1289	394	—	—	2,446
1280	567	—	—	3,013
1281	No data	—	—	—
1282	No data	—	—	—
1283	305	—	—	3,318

Table 1 (continued)

(100,000 ounces)

Year	First issue	Second issue†	Third issue‡	Cumulative Total§
1284	315	—	—	3,633
1285	1,000	—	—	4,633
1286	1,000	—	—	5,633
1287	41	500	—	8,174
1288	—	460	—	10,400
1289	—	890	—	14,400
1290	No data	—	—	—
1291	—	250	—	16,100
1292	—	250	—	17,400
1293	—	250	—	18,600
1294	—	96	—	19,100
1295	—	155	—	19,900
1296	—	200	—	20,900
1297	—	200	—	21,900
1298	—	150	—	22,600
1299	—	450	—	24,900
1300	—	300	—	26,400
1301	—	250	—	27,600
1302	—	1,000	—	32,600
1303	—	750	—	36,400
1304	—	250	—	37,600
1305	—	250	—	38,900
1306	—	500	—	41,400
1307	—	500	—	43,900
1308	—	500	—	46,400
1309	—	500	—	48,900
1310	—	—	725	67,000
1311	75	1,000	—	72,500
1312	50	1,111	—	78,100
1313	100	1,000	—	83,200
1314	50	1,000	—	88,300
1315	50	500	—	90,800
1316	50	200	—	91,900
1317	50	240	—	93,100
1318	50	200	—	94,200
1319	50	740	—	97,900
1320	50	740	—	101,700
1321	25	500	—	104,200
1322	25	400	—	106,200
1323	25	350	—	108,000
1324	75	300	—	109,600
1325	50	200	—	110,600
1326	50	200	—	111,700
1327	50	200	—	112,700
1328	No data	—	—	—
1329	15	155	—	113,500
1330	20	596	—	116,400

* Based on a table on p. 23, H. B. Morse, *Currency in China* (Shanghai, 1906). Figures for 1285-6 from Yang, p. 64.

† Valued at five times the first issue.

‡ Valued at five times the second issue.

§ In order to make the figures comparable, second issue notes are counted as five and third issue notes as 25. Since there are a number of years for which we have no data, and since we have no way of knowing how many notes were accidentally destroyed, these figures should be considered only as indicating the general trend of the volume of currency in circulation. From 1288 the last two digits are rounded off.

likely, however, that the period when the expansion of the currency issue was matched by the expansion of the demand for currency ended about this time and the currency began to fall in value. With the value of the currency falling, it was necessary to increase the printing rate to cover that portion of the budget which was not covered by more conventional methods of taxation. In 1273 fractional notes had been issued; in 1278 they were abandoned, presumably because the falling value of the currency made them too small to be useful. Various measures were taken to improve the demand for the currency. In 1280 its use was extended into the Uighur areas, in what is now west China, and in the same year silver and gold coins were abolished in the former domains of the Southern Sung. At this time it was possible, as in the present-day United States, to obtain gold or silver from the treasury in exchange for paper currency provided it was to be used for manufacture, not circulation. In 1283 private trade in gold and silver for any purpose was prohibited. In 1285 this restriction was relaxed.

In 1287 a new currency was issued, which was legally valued at five times the older issue. The old currency continued in circulation, however. Under the system explained by Marco Polo, old notes were replaced by the treasury with new ones so that, except for accidental loss or destruction, notes remained in circulation indefinitely. It seems likely that the new currency was given a value five times that of the old currency because the old currency had fallen to 20 per cent of its original value, but it is not possible in this case to make any accurate comparisons between the decline in value of the currency and the increase in the supply. It would appear, however, that the expansion of the currency area to include the former Southern Sung empire and the Uighur areas at least cancelled out the inflationary effect of the increase in velocity of circulation which would have occurred when the value of the currency began to decline.

In order to promote the circulation of the new notes, private trade in gold and silver was once again prohibited. Since the new notes were worth five times the old, the first year's printing was equivalent to two and one-half times the highest yearly issue of the old notes. Thereafter the chart shows first a fall in the amount of yearly issue and then a rise. The rate at which the currency was depreciated by the government declined, however. The 50,000,000 ounces printed in 1287 increased the total number of notes outstanding by about 40 per cent; in 1309 the same absolute amount of new notes increased the total only a trifle more than 5 per cent.

In 1294 an imperial decree was issued prohibiting the circulation of 'wooden or bamboo money'. It is fairly easy to guess what this 'money' was. We are all familiar with street-car tokens and restaurant coupon books. In China this type of token has had very great popularity, and small wooden or bamboo tokens entitling the bearer to various things from a pound of salt to a pail of hot water circulated in most Chinese cities in imperial times. In a period of currency depreciation, such tokens, issued by a reputable commercial establishment and redeemable in some commodity of general usefulness, might well begin to replace the national currency in local areas.

In 1310 a new note was issued, legally valued at five times the worth of the second issue and 25 times the worth of the first. Table 1 shows that the amount of currency issued had increased to almost 900 per cent of the amount outstanding when the second issue was first issued. We have no data on the 'black market' value of either the new or the old currency but it seems likely that even the new note was valued at considerably less than par. In any event, the new note was almost immediately given up and the issue of the two older issues was resumed

on a large scale. While the absolute amount of new notes was increased, however, the rate of expansion of the currency supply was much lower than it had been in the first thirty-five years of large-scale use of paper money by the Mongols (see Fig. 1). Since the Mongol empire, which was beginning to run into difficulties on both the international and internal fronts, was not in a position to give up voluntarily any major source of income, it must be assumed that their very minor use of the printing press during the latter part of their reign was the result of factors beyond their control. What these factors were will be discussed below.

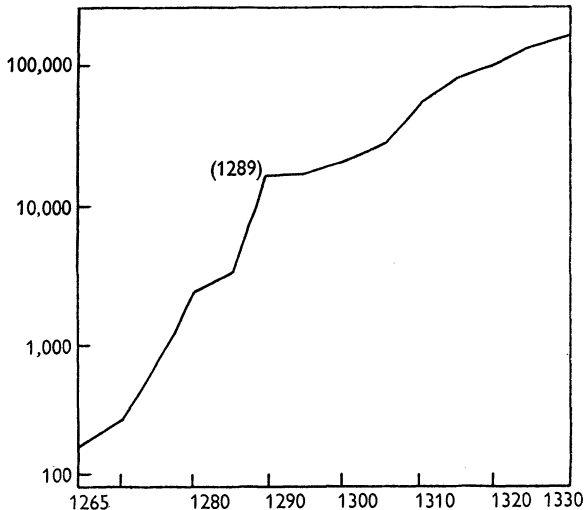


Fig. 1. Graph of total Mongol income note issue 1260-1330¹ (in 100,000 ounces, at five-year intervals).

Our statistical data on Mongol note issues terminates in 1330, but there is no evidence that the situation changed much between then and 1350. Probably the currency issue was increased a few per cent each year. With the gradually increasing disorder as Mongol control slipped, however, the currency probably fell in value more than could be accounted for by the increase in the currency volume. Rules against the use of hard currency became harder and harder to enforce and the depreciation of the paper currency was accelerated as more and more of the demand for currency was filled by metals. In 1350 a new note was issued, valued at twice the 1287 issue. Interestingly, its value was stated not in silver, but in copper. It will be recalled that in 1949, when the Gold Yuan had collapsed, the National Government of China replaced it with the Silver Yuan. Perhaps in both cases the government hoped, by returning to an older currency metal in the name of their new paper, to disassociate it from the previous currency disaster. If this was their motive, it was unsuccessful in both cases. In 1350 'people valued only hard cash'. By 1356 all Mongol paper money had become practically worthless. The dynasty ended in 1368.

It is customary to allege that the reckless printing of paper currency was one of the prime causes of the downfall of the Mongol dynasty in China.² This may

¹ Since this graph is simply a graphic representation of the fourth column of the chart of Mongol note issues, it is subject to the same limitations on accuracy mentioned in n. §, p. 402.

² The same statement is sometimes made about the Southern Sung. Vissering, pp. 215-20.

be so, but the Mings who overthrew the Mongols were equally reckless in their monetary policy during and after their successful uprising. Various issues printed during the revolutionary period were consolidated in 1375 and a new note was issued. Although this note was not convertible, it was officially worth one string of copper or one ounce of silver. In an effort to give the note value, it was ordered that commercial taxes were to be paid 30 per cent in cash (copper) and 70 per cent in notes. Trading in gold and silver was also forbidden but no effort was made to enforce this prohibition. In 1385 the officials' salaries, previously paid in rice, were converted to notes and, in 1389, fractional notes were issued. It would seem that, once again, we are encountering a situation where the expansion of the currency issue by the government approximately matches the expansion of the use of the paper notes, with the result that their value remains stable. As we have seen, the time inevitably comes when no further expansion of the area of circulation is possible.¹ The Ming apparently reached this stage in the early 1390's. In 1393 the circulation of metallic copper was 'temporarily prohibited', presumably because the paper notes were beginning to depreciate. By 1400 the paper currency notes had fallen to 3 per cent of their face value. In 1404 the salt tax was ordered to be paid in notes in hopes of drawing off the 'excess' currency. In 1429 a special tax organization was set up specifically to draw in the paper currency. None of these measures was successful, however. In 1425 the note issue was valued at only slightly more than 1 per cent of its face value; by 1450 it had fallen to less than one-tenth of 1 per cent of face value. Circulation of paper currency seems to have practically ceased by 1500 and the notes were becoming collector's items.

The collapse of the Ming currency was not, however, due to a runaway printing press. In the early years of the fifteenth century, the Ming gradually stopped printing currency. At the same time it gradually relaxed its efforts to support the currency. Since the currency was already badly depreciated, and, of course, inconvertible, it was rapidly replaced by metal coins when government support was withdrawn.

From 1500 to the breakdown of the old Chinese system under western influence, we hear little of paper currency. Printing of paper currency was discussed by the Ming government just before the dynasty fell, but none was issued. The newly established Ch'ing dynasty issued a few notes from 1650 to 1661, but the issue, which totalled less than 1,000,000 ounces at face value, was abolished in 1661. In 1853, during the Taiping rebellion, the Ch'ings once again issued a few notes to help pay for their military operations, but their value dropped very rapidly and they ceased to circulate after 1861. In 1853 the Ch'ing also tried another type of token money. Iron coins were issued, but they also depreciated to their metallic value very quickly. For some reason, however, these iron coins remained the common circulating medium of the Imperial capital of Peking until almost the end of the dynasty.²

But, while the Chinese government, as long as it remained Chinese, eschewed the printing of paper currency, private bank notes once again became an important part of the Chinese monetary system. At least as early as the seventeenth century banks and goldsmiths were issuing credit instruments. In the eighteenth and nineteenth centuries, they issued regular private bank notes.

¹ I am not discussing the modern world where a perpetually expanding economy appears to be possible.

² S. W. Bushell, 'Coins of the Present Dynasty of China,' *Journal, North China Branch, Royal Asiatic Society*, vol. xv (1880).

There are no statistics available, but the circulation of such notes in the nineteenth century was very great. Not only banks, but other commercial companies sometimes issued notes. It is interesting that, in the north, where the trade in brick tea was important, these notes frequently were based on tea bricks rather than on metal.

On the whole, Chinese monetary experience seems more or less in accord with modern monetary theory. Only once, and then only for a short period under the Chin, did any Chinese government try to combine inflation with price control.¹ The rate of inflation was also normally low. In the latter part of the Chin dynasty rates of inflation which would do credit to a modern European country were obtained, but this was the exception. Normally it would appear that the amount added to the money supply ran well under 20 per cent per year. This is particularly remarkable when it is remembered that the various dynasties were engaged in active warfare for much of the period studied.

From the standpoint of the economist, however, the most interesting feature of the history recounted above is the fact that, after some 500 years experience, the Chinese eventually abandoned the use of state-sponsored paper money and returned to a combination of hard currency and private bank notes.² There were four separate occasions when the use of governmentally-issued paper money was abandoned. The paper currency of the Southern Sung was still circulating when the dynasty fell. In the cases of Chin, the Mongols, Ming, and, probably, the provincial currency of Szechuan, however, the paper notes simply ceased to circulate. Chin and the Mongols stopped issuing paper currency when they were on their last legs, when one would expect the printing presses to be working overtime. Ming, however, gave up in the height of its power.

Unfortunately our historical records are weak on this issue. We must turn to theoretical analysis to explain the actions of the various Chinese governments who gave up the use of the printing press as a source of revenue. Any explanation of the abandonment of paper currency must explain both why the people abandoned its use and why the government let them. After the populace has established the habit of using paper currency, its abandonment must take the form either of a return to barter or a development of a substitute currency. Barter is an extremely inefficient system, and a currency would have to depreciate at an extreme rate to make barter an attractive alternative.³ An alternative currency presents less of a problem, however. The most diverse commodities have been used as currency. The use of cigarettes in post-war Germany harks back to the use of tobacco in colonial Virginia. In our survey of Chinese monetary history we have seen 'warehouse receipts' for brick tea and tickets for various other commodities partially taking the place of money. Historically, however, gold and/or silver have been the primary 'commodity' moneys.

¹ That is, general price stabilization by use of the police power. The Chinese have always believed in 'interventionism', and during the period of our study there were doubtless thousands of government orders, mostly by local governments, fixing specific prices. It seems likely that the experience obtained in attempting to enforce such orders may have been a factor in the decision not to institute an O.P.A.

² Both Jevons and Macleod seem primarily interested in this point in brief accounts they give of the Chinese experiment in paper money. From the perspective of the 1950's, however, the explanation that inflation led to loss of confidence, loss of confidence led to abandonment of paper currency seems a trifle over-simplified (*op. cit.*).

³ This assumes free markets. A system of price controls in a period of inflation can make barter attractive by making monetary transactions practically impossible.

The inconvenience of direct use of the precious metals as currency lies not so much in their weight as in the fact that they must be assayed at each transaction. In a time of inflation, people are confronted with the necessity of deciding whether they find the gradual shrinking of their money more or less inconvenient than the inconveniences which necessarily surround the use of the precious metals. The higher the rate of depreciation of the paper currency, the more the cases in which it would be replaced by precious metals. Since each replacement of paper by metal restricts the sphere in which the paper circulates, this replacement, in and of itself, accelerates the inflation. Presumably, at a fairly low rate of expansion of the money supply the use of paper money would, in time, be abandoned if the people were left to make their own decisions.

In a period of mild inflation, however, the replacement of a paper currency, to which the people have become accustomed, by some commodity would take some time. As people begin to realize that the paper currency is gradually shrinking in value, different people will turn to different expedients to keep up the value of their liquid reserves. Only when one or a few commodities begin to be accepted by everyone as a store of value, will paper begin to be displaced as a circulating medium. The speed with which paper passed out of circulation would be influenced by the rate of inflation, the relative availability of commodities suitable for use as currency,¹ and the temperament of the population.

The successive Chinese governments covered in this study had not the advantage of officials trained in economics,² but they early realized that they must prevent the use of competing forms of money if their paper money was to continue in use. The slow rate of inflation maintained in the latter half of the Mongol dynasty would appear to indicate that, by the early part of the fourteenth century, they had realized that a high rate of expansion of the money supply might rapidly drive paper money out of circulation. We have seen a large number of measures taken against the use of commodity moneys by the various Chinese governments. Undoubtedly a government can, by use of its police powers, markedly reduce the speed with which paper currency is replaced by something else, even in a period of inflation. It is, however, an area where enforcement becomes progressively more difficult. The difficulty of enforcement is accentuated by the fact that the enforcement officials, themselves, have as much motive to violate the legal restriction as have private citizens. All of the Chinese governments eventually gave up the fight. It would appear that they found inflation of the currency a wasting asset. At first the raising of government funds by printing currency seemed miraculously easy. As time went on, however, the administrative measures necessary to prevent the development of a competing currency became administratively more and more difficult and/or less and less effective. The value to the treasury of new currency issues shrank as the share which paper had of the total currency 'market' shrank. Eventually, it became administratively more difficult to raise a given amount of funds via the printing press than by taxation.

Washington D.C.

¹ Too many commodities suitable for use as money would slow down the standardization on one which is necessary for development of a substitute money.

² Vissering is largely an annotated translation of a work by a thirteenth-century Chinese historian which, in turn, is largely a collection of contemporary documents on monetary problems. These materials clearly demonstrate that the Chinese of the thirteenth century knew little more about monetary theory than their contemporaries in Europe.