CHINA'S SILVER PERIOD AND TRUST: COMPARING SHOCKS IN THE MING-QING TRANSITION (CA. 1600-1700) AND THE 19TH CENTURY[1]

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Very preliminary version!

ABSTRACT

China's economy was the first in the world that used paper fiat money during the Sung Dynasty. Not being backed by silver, it soon lost trust and, after an aborted attempt to reinstate this currency during the early Ming, China's economy reverted to a de factor silver standard to restore the trust of the population. From this point onwards the economy was mainly driven by supplies of uncoined silver and copper coins with the exchange rate being determined by the market. Many discussions have taken place about this silverization of the Chinese economy. Some have argued that the (lack of) silver was a reason for recessions among the common people and a reason for dynastic change, while others viewed hardly any effect at all. Likewise, some claimed that the inflow of silver has been big, with China growing at such a speed it was capable to absorb all silver, while other have argued the contrary. Both questions, however, boil down to the theoretical model behind the money stock in China.

In this paper, after analysing the inflow of silver as well as its relation with local society, we find that, even though China silverized at a fast rate, its level of silverization in the local economy remained relatively low. Most of it went into replacing other types of money, hence the actual expansion of the stock of money was relatively slow. This implied that, when, at the end of the 17th century as well as in the beginning of the 19th century, when silver was flowing into China in lesser amounts, copper coins declined in value versus silver, people had to pay increasingly more coins for the same amount of produce and, hence, saw their income decline. This was exacerbated by increased hoarding of silver during these silver famine periods.

These developments, however, do not suggest China's economy was flourishing as has been argued by members of the California school. First, Chinese economy absorbed much silver to replace existing means of exchange. Second, existing studies in national income show a decline up to the mid-19th century. Finally, even though the copper coin versus silver ratio indeed increased (i.e. suggesting that even with a large inflow there remained a shortage of coins), the coins lost a lot in purity, meaning that the copper weight to silver weight ratio remained more or less unaltered between the 17th and 19th centuries.

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1. INTRODUCTION

China's monetary history is one of continuous experiments. From a system largely based on copper coins, the *wen*, during the Tang Dynasty (618-907) and the Five Dynasties and Ten Kingdoms period (907-960), it went to a multiple currency system during the Song dynasty (960-1276). Even though the money of account remained copper, it also introduced paper notes backed by copper. The shift towards uncoined silver as a money of account took place during the Jin Dynasty (1115-1234) which slowly replaced the Song Dynasty in Northern China. This Dynasty also issued paper notes backed by silver. Yet, it was only during the Mongol Yuan Dynasty (1271-1368) that several attempts were made to create fiat paper money, i.e. even though silver was still money of account, the paper currency was not convertible anymore in silver (Von Glahn 2010). The bad economic and political situation combined with shortages of copper and silver induced strong inflation in this period. After the fall of the Yuan Dynasty, the Ming rulers (1368-1644) initially tried to re-establish a system based on copper as money of account both for its fiscal system and paper currency. Yet, just as the paper currency were to disappear quickly, so the Ming rulers in the 1430s changed the money of account back to uncoined silver. Even though at times there were attempts to increase the money stock (for example by printing paper money), this situation of an essentially bimetallic currency system with uncoined silver and minted copper coins remained in place from the 1430s up to the start of the twentieth century.

The period between the 1430s and the start of the twentieth century, which was characterised by small copper currency, the *wen*, and uncoined silver (sometimes provided as ingots), has been topic of much research. Two different, though related, discussions stand out. First. There is the discussion about the role of silver in dynastic decline. Many authors have argued that the shortage of silver in the mid-17th century due to smaller imports from the Spanish America's and the contraction of on Japanese silver caused rising prices, economic hardship, and ultimately contributed to the fall of the Ming Dynasty in 1644 and its replacement by the Qing Dynasty (1644-1911). The authors following this statement essentially use the Quantity Theory of Money by arguing that the imports of silver in the 1630s went down, which was exacerbated by a reduction in the velocity of money, implying that regions became more secluded, i.e. the commercialisation went down. In a similar fashion, Lin (2006) argued that the silver crisis of the start of the 19th century also contributed to the instability of the Qing Empire, which was only rescued by the renewed net inflow of silver in the second half of the 19th century. This view is attacked by Von Glahn (1996b) who argued that not only did silver inflows hardly diminished in the 1630s and 1640s, but also that, when silver is scarce, we expect prices to decline while in fact they were rising affected as they were by catastrophic famines in the 1630s.

Second, the presence of silver has been used as an argument for assessing the level of development of the Chinese economy as a whole. For example, Frank (1998) and Atwell (2005, p. 476) argued for the 17th century that the Chinese economy grew to such an extent that it was able to absorb all the silver that flowed into the country without losing its value versus copper, which was used in day-to day transactions. Indeed, the 1650s witnessed a steep increase in copper coin to silver ratio. On the other hand, Von Glahn (1996a, b) argued that the increase in the copper coin to silver ratio was just an acceleration of an already existing trend (1996a) and, furthermore, was removed by a reduction of the copper content of coins.

Both discussions essentially touch upon the question how silver affected the Chinese economy. In this paper we aim to further look into the role of uncoined silver as a money of account in the Chinese economy between the 16th to 19th centuries by focussing on the economic developments during the two silver famines in the mid-17th and the start of the 19th century. We will do so by, in the following Section, dealing with the stock of silver in circulation in China. Part of the explanation on how the resulting stock of silver affected the Chinese economy lies in its relation with copper coins, which were used in day-to-day transactions. We will deal with this in

Section 3. The findings from Sections 2 and 3 are then combined in Section 4 where we will deal with the consequences for Chinese economic development. We will end with a brief conclusion.

2. INFLOW OF SILVER INTO THE CHINESE ECONOMY

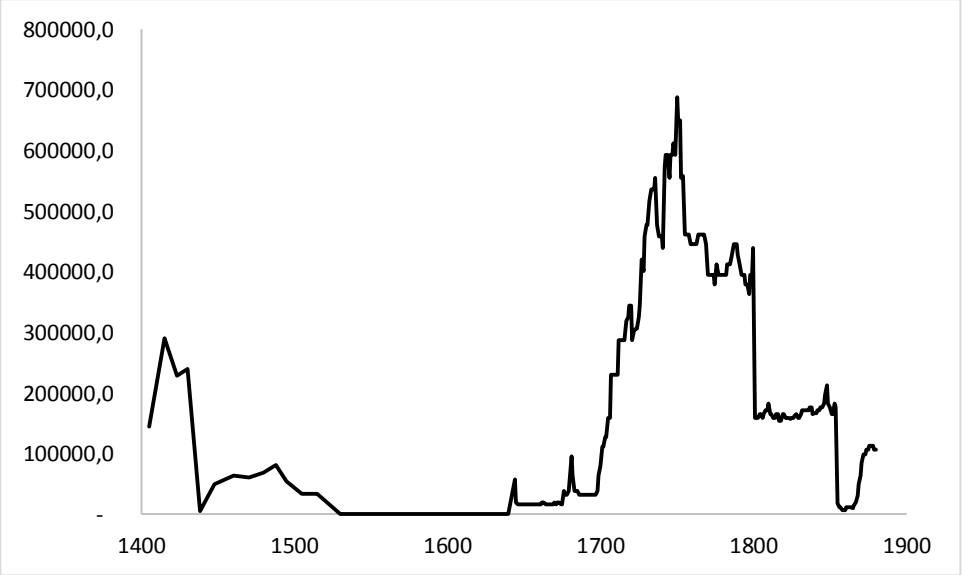
The inflow of silver in the Chinese economy is widely discussed (e.g. Flynn and Giraldez 1995; 1997). This silver came from four main sources. There was a domestic production, but most of it originated from Japan, or from South America (the latter flowing into China either via Manila or Europe both of which ultimately drew their silver from the Latin American mines (TePaske 1983)). Domestic production was indeed relatively modest even though the annual silver production significantly increased from 30,000 to 220,000 tael at the end of the 14th and start of the 15th century. Due to severe corruption, however, official silver production declined from 1453 onwards so that annual silver production dropped to 49,000 tael. From 1520 to 1644 the Ming government even abandoned silver mining altogether. Even though, after the rise of the Qing

Table 1 Official annual production of silver between 1380 and 1880

year	annual production(tael)
1380-1400	30,000
1401-1434	230,000
1435-1520	49,000
1662-1700	12,000
1700-1750	377,197
1750-1800	439,631
1800-1850	172,742
1800-1880	70,795

Source: Wu (2001); Qing archive of mining industry

Figure 1 Official annual production of silver between 1380 and 1880



Source: See Table 1

dynasty in 1644, domestic silver production resumed, it remained, with an annual production of 12,000 tael, at a low level (see Table 1, Figure 1). Considering a tael weighs ca. 37 grammes, the total amount of silver produced locally would never have been enough to silverize the Chinese economy. After all, even during the peak in the mid-18th century only 25,000 kilos were produced which means, on a population of ca. 286 million, 0.09 grammes per capita.

Therefore, it was largely through imports that the stock of silver could be expanded, i.e. via Japan, Manila, or Europe. The main import of silver from Japan took place between 1550 until this started to decline in the 1640s. This silver import has been quantified by many scholars (see Table 2). Most seem to agree of an annual import of ca. 1 million tael, which declined after 1650.

Table 2 comparison of different estimates of silver imports from Japan between 1530 and 1708 (tael)

year	total amount of import	annual import	source
1530-1644	175,000,000	1,535,088	Zhuang (1995)
1585-1640	14,900,000	270,909	Boxer (1988)
1550-1645	98,990,000	1,042,000	Von Glahn (1996a)
1540-1647	79,581,250	743,750	Wu（2001）
1550-1645	224,000,000	2,357,895	Yamamura and Kamiki (1983)
1648-1700	27,733,333	533,333	Wu（2001）

A third main source of silver is the trade with Manila, which took off after its founding in 1571. Table 3 shows current estimates of the imports of silver from Manila. These estimates are to a certain extent controversial since a large amount of smuggling occurred (e.g. Flynn and Giraldez 1995). Hence, calculations vary widely (see Table 3). However, as argued by Wu (2001), for the period between 1550 and 1649, Von Glahn (1996a), Liang (1989), Wang (1964), and Peng (1958) ignored parts of import of silver from Manila to China. On the contrary, Wan's (2004) estimate was based double counting of part of the silver that was imported into China. Therefore, we follow the estimates from Wu (2001) and Zhuang (1995) the average of which we will use further in the paper.

Table 3 Comparison of different estimates of the import of silver from Manila to China (tael)

year	total amount of imports	annual import	source
1550-1645	61,570,000	648,105	Von Glahn (1996a)
1550-1645	35,200,000	370,526	Yamamura and Kamiki (1983)
1573-1644	20,450,000	288,028	Liang (1989)
1571-1644	38,160,000	522,740	Wang (1964)
1567-1644	43,200,000	561,039	Peng (1958)
1570-1644	203,200,000	2,745,946	Wan (2004)
1570-1649	68,552,250	867,750	Wu (2001)
1567-1643	75,000,000	986,842	Zhuang (1995)
1650-1699	14,837,000	302,796	Wu (2001)

Finally, from 1550 onwards, European merchants shipped some silver to China in exchange for Chinese products. As table 4 shows, most scholars seem to agree on annual imports in the order of ca. 400,000 tael. Indeed, as Liu (2009) argued, Wan's (2004) estimate suffers from severe double counting. Therefore, we take average from the, very similar, estimates of Von Glahn (1996) and Zhuang (1995).

Table 4 Comparison of different estimates of the Chinese imports of silver from Europe (tael)

year	total amount of imports	annual imports	scholars
1550-1645	32,800,000	345,263	Von Glahn(1996)
1570-1644	133,340,000	1,801,892	Wan (2004)
1569-1636	27,000,000	402,985	Zhuang (1995)
1700-1751	49,010,000	960,980	Yu (1940)

For the period after the middle 18th century, Wu(2001) and Liu(2009) merged the different estimates in term of import and export of silver in China together as we cited in the table 5. Combing all sources of silver in China enables us to tell something about the amount of silver in circulation. Table 5 shows our preferred estimates for annual increase in silver in China via imports and domestic production up to the transition of Ming and Qing dynasties in the mid-17th century. Adding up these values before 1650 and subtracting rough 50% (10% for wear and

Table 5 Annual increase in silver in China via imports and home production (tael)

	Imports from Japan	Imports from Philippines	import from Europe	domestic production	export to Europe	net inflow
1540-1644	1,200,000	928,000	374,000	——		2,502,000
1645-1700	570,000	303,000	——	12,000		885,000
1701-1759	95,624		416, 667	404, 331		1,436,755
1760-1799			5, 532, 650	414, 915	3, 135, 275	2,812,290
1800-1834			7, 377, 400	170, 690	9, 750, 057	-2,201,967
1834-1856						-8,050,000

Source: Tables 1-4; Irigoin (2009)

tear and 40% for hoarding) (Wu 2001, pp.228) results in roughly 130 million taels of silver in circulation in 1650. This value corresponds to estimates from Liu (2005) who estimated the amount of silver in circulation to increase from 20 million taels in 1550 to around 130 million in 1650.

We are no able to give an overview of currency in circulation (see table 6). It is clear that in the 19th century the rise of notes, still backed by silver or copper, was once more on the rise.

Table 6 Money in circulation in benchmark years in China (tael)

	silver	copper	notes	total
1550	20,000,000	47,000,000	-	67,000,000
1650	130,000,000	47,000,000	-	177,000,000
1750	317,000,000	133,000,000	-	450,000,000
1855	1,169,000,000			*1,169,000,000*
ca. 1900	907,900,000	365,400,000	194,600,000	1,467,900,000

Sources: This text ; Liu (2005) ; Lin (2006, p. 85); Yan (2011)

Also, we can see that the increase in money between 1650 and 1900 was close to 8 times while population increased about 2.3 times.

3. MONETIZATION OF THE CHINESE ECONOMY

From the evidence of the inflow of silver we may deduce two things. First, it seems to be unlikely that the Ming-Qing transition as such was induced by a silver famine. Not only did silver imports not significantly decline until after the transition had taken place, but also the amount of silver in the economy was probably relatively small given its fast subsequent rise (see Table 6). But how deep did silver actually penetrate within the Chinese economy? One argument often brought forward by protagonists of a high degree of silverization is the, often quoted, "single whip" reform

in which a part of Chinese taxes was bundled into one silver tax. This reform introduced by the Ming government in order to convert tax into silver, started in certain provinces already in the 1530s, and

Table 7 Chinese government income by category (expressed in tael of silver)

	tax in produce	tax in textiles	tax in copper	tax in paper cash	tax in silver	total tax
1450	25,880,000	255,500		4,737	-	26,140,237
1500	30,900,000	766,000		3,247	32,000	31,701,247
1552	26,590,000	386,500		2,414	2,433,000	29,411,914
1602	28,370,000	345,500		0	4,582,000	33,297,500
1620	27,800,000	270,500		8	7,552,000	35,622,508
1651	10,482,525		2,430,722	64	23,065,302	35,978,614

Note:

(1) 5 benchmarks from 1450 to 1620 were annual government revenue in the Ming dynasty. The taxation levied by the Ming government was comprised of non-currencies, which were levied in wheat, rice, cotton clothing, and silk textile, as well as currencies, which were levied in both paper and silver cash. Based on the official price of both non-currencies and paper cash in silver, we convert both non-currencies and paper cash to silver. According to government policies, 1 shi in rice or wheat costs 1 tael in silver; 1 pi in cotton clothing costs 0.5 tael in silver; 1 pi in silk textile costs 1 tael in silver; 100 guan in paper cash = 1 tael in silver in 1430; 1000 guan in paper cash =1 tael in silver between 1440 and 1470; 2000 guan in paper cash =1 tael in silver between 1480 and 1620.

(2) The benchmark in 1651 was government revenue in Qing dynasty. The taxation levied by the Qing government still consisted of both non-currencies, which were levied in wheat, rice and hay, as well as currencies parts, which were levied in copper coin, paper and silver cashes. The official price of non-currencies, copper coin and paper in silver are following: 1 shi in rice or wheat costs 1 tael in silver; 1shu in hay costs 1 tael in silver; 1000 wen in copper coin costs 1 tael in silver; 2000 guan in paper cash =1 tael, which is taken from Ming price.

Source: Wu (2001); *shizu zhanghuangdi shilu*, vol.60.

lasted about 100 years before being complete. Yet, as Table 7 shows, even though the percentage silver in total government tax went up, it still did not make up more than 20% in 1620, well. This changed in 1651 during the Qing dynasty reign. Since its rise to power, the Qing dynasty started a serious reform in government finance: firstly it maintained and expanded the single whip reform initiated by the Ming to silverize government income and expenditure; secondly it cut the non-currency taxation as much as possible, which accounted for 1~2% of total revenue. As table 7 showed, non-currency taxes in textiles had been completely abolished, mainly because the government did not control textile production anymore, but the main difference was that the government had aborted many of its non-currency based activities. These reforms caused government finances to be for 64% in silver.

Yet, even though the economy had silverized between ca. 1550 and 1650, this was not the case for ordinary people. As pointed out by Lin (2006, 5), government paid many of its activities in silver, i.e. largely to official and soldiers in big cities. Likewise long-distance trade and big merchants were using increasingly silver (e.g. Geiss 1979). However, smaller provincial towns, let alone the countryside, paid overwhelmingly in copper coins. It is therefore wrong to take the 65% of government tax paid in silver at the start of the Qing dynasty as being indicative that the economy was also for 65% silverized. In this respect we disagree with Geiss (1979, 155) who claimed that, copper could not take the place of paper cash due to the inability to assess their purity.

Hence, it was much easier to set prices in silver. Indeed, even though this is exactly what happened, also because copper indeed varied in purity as we will see in next Section, using silver as a unit of account does not mean the economy was silverized. As we have seen the majority of every-day transactions remained done in copper, even though silver was often used as a unit of account.

Indeed, ordinary people had little options to actually pay in silver. We can calculate, based on Table 6, that in the 17th century, on average there was 1 tael per capita in circulation, while there were ca. 400 copper *wen* available. Especially since silver was not coined, but melted and formed in ingots of varying weights with a low value ingot easily be as much as 5 tael, paying in silver might prove problematic. On the contrary, Braudel and Spooner (1967, p. 445) estimate that between 1500 and 1600 in Europe there was a stock of ca. 37,000 tonnes of silver (or 1 billion tael), implying 11 tael per capita. Given that in Europe coins did contain much less than the weight of tael in silver, it implies a much heavier level of silverization. Therefore, it is not surprising China relied much more on copper coins. Indeed, given that at best 50% of the population works and many will also have been paid in kind, we can assume the amount of cash per paid labourer will have been ca. 1200 coins, which boils down, with an average wage of ca. 19 tael, to 9.2% of the annual wage.[2]

Nevertheless, the share of silver in the economy increased markedly over time (see Table 6). So, whereas around 1650 still 1 tael per capita had been available, around 1850 it had increased to 2.7 tael. It is clear, however, that this silver still could not be used in day-to day transaction, and neither did the paper notes that were being issued at that time. One way of looking at this in more detail is by surveying a set of stone inscriptions. Based on a large amount of local inscriptions across China in Qing dynasty, 48 observations are collected from Shanxi, Henan, Guangdong, Guangxi, Fujian, Jiangsu, Beijing and Shanghai, which report in detail which currency was spent in different construction projects such as temples, ancestral halls, drama stages, schools, dams, and guild halls (see table 8). By plotting these observations together, we thus get a picture of the actual

Table 8 Distribution of construction observation over Qing Dynasty

Period	Beijing	Shanghai	Henan	Shanxi	Jiangsu	Fujian	Guangxi	total
1650-1750			1			1		2
1750-1800	2	1	1		1		1	6
1800-1850		2		5	3		6	16
1850-1910		2		3	5	5	8	23
total	2	5	2	8	9	6	15	47

Source: Beijing：Wang, Shixiang ed.(2008): *Regulation of Artisans in Qing Dynasty*, China's Bookstore. Li, Hua(1980): *Stone Inscriptions of Guild Hall in Beijing Since Ming-Qing periods*, Relic Press. (王世襄编：《清代匠作则例汇编》，中国书店 2008 年版；李华：《明清以来北京工商会馆碑刻选编》，文物出版社，1980 年。)

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[2] This is under the assumption that 1 tael of silver is equal to ca. 700 copper coins.

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money paid during the Qing dynasty which is reported in Table 9. After correcting for different provinces, it becomes clear that, even though the share of silver payments increased in the late Qing, this increase remained relatively small. However, please keep in mind these are just

Table 9 Share of copper and silver payments in stone inscripts

	silver	copper
1750	5%	95%
1780	5%	95%
1820	6%	94%
1840	7%	93%
1860	7%	93%
1890	11%	89%

observations for low skilled construction work while big merchants and government officials were more generally paid in silver. Hence, this increase in silver payments of even lower skilled workers tells us that the society as a whole substantially increased the level of silverization.

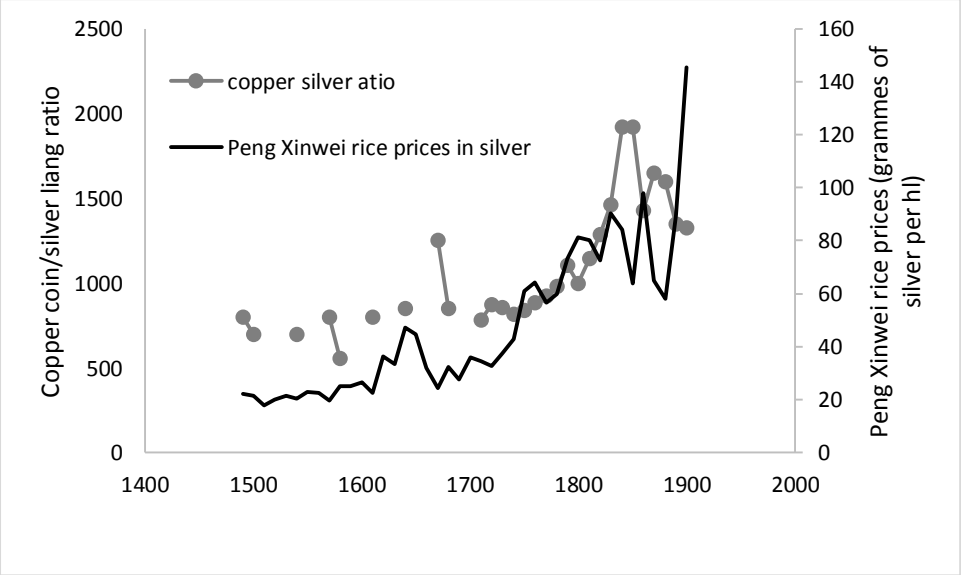
4. MONETIZATION AND CHINESE ECONOMIC DEVELOPMENT

In the previous Sections we have dealt with two main issues in Chinese historiography, i.e. the amount of silver in the Chinese economy and the extent to which this silver poured down to the "common man". The question that thus remains is how this silver influenced Chinese economic development.

As pointed out in the introduction, two major, and interrelated, debates surround this question, namely, first, whether the Chinese economy suffered from the two silver famines and, second, whether the Chinese economy was developed enough to absorb the large increase of silver that occurred between the 17th and 19th centuries. Both questions, however, ultimately derive from how we view the role of money. In an orthodox monetarist way, any outflow of money can only have a temporary effect on the real economy as it will simply reduce prices in the long-run. This view was also stressed by contemporaries in the 17th century such as Tang Menglai (1627-1698), a scholar-official from Shandong, who argued that silver was not presenting wealth by itself, but rather that all kinds of products could function as money as long as people had trust in it (Kishimoto-Nakayyama 1984, p. 240). Wealth rather came from grain, or silk.

Yet, an alternative view, as expressed by Wei Shixiao(1655-?) who argued that "When misers accumulate treasure, the treasure is damaged. Spendthrifts may spend a million taels a day on foolish extravagances, but the expended treasure circulates among the people through the hands of those who obtain it." (Kishimoto-Nakayyama 1984, p. 241). In other words, even though spending is a vice in itself, it is a virtue for society. This matches more with the Keynesian interpretation of the stock of money, which argues that a decline in the stock of money (M) rises the rate of interest, decreasing investment (i.e. increasing hoarding) which in turn decreases income, output and unemployment via the multiplier effect. In this version, it is unlikely that there will be a price effect. Indeed, looking at the silver prices of rice by Peng Xinwei (1958), we find very little

Figure 2 Copper coin/silver ratio and silver rice prices



evidence of a strong price decline (see Figure 2) other than the decline to normalcy after the wars and famines of the Ming-Qing transition. A similar argument can be brought forward for the Daoguang depression during the first half of the 19th century. Also here we find very little evidence for a substantial decline in rice prices.

If indeed the Keynesian interpretation holds, we should find evidence of increased hoarding. We can express this formally, using the Cambridge cash balance version of the Quantity theory of Money, i.e.

$$M = kPy$$

,where M is the money in circulation (M1), k is proportion of national aggregate income the population holds in cash balances, P is the price level, and y is real Net National Income. From Table 6 we know the stock of money, while GDP, being a proxy for NNI, can be ontained from Shi et al. (2014) and Broadberry et al. (2012). P can be obtained from Peng Xinwei (1958). The results

Table10 Cash balances as a percentages of national income

1550	0.25%
1650	0.47%
1750	0.37%
1855	0.51%
ca. 1900	0.37%

are given in Table 10. First, it is clear the percentages are much lower than those at present-day, which is close to 8%. Yet, much production in the 17th (and 19th) century was also not monetized which reduces the percentage cash balance. Nevertheless, it is clear that in the 17th century and the start of the 19th century hoarding went up in reaction to the silver famine hence confirming essentially Keynesian mechanics.

This also implies that a silver famine is likely to reduce the money stock even further by hoarding, i.e. reducing the velocity of money. But did this in fact turn out to be a problem for ordinary people as most of them, even in the 19th century, still paid in copper? As figure 2 shows, the copper coin-to silver ratio went up considerably between the 17th and 19th centuries with most

Table 11 copper coin/silver liang ratio corrected for share copper in coins

	copper coin/silver liang ratio	percentage copper in copper coin	copper coin weight (grammes)	
1375	1000	100%	3.72	1,000
1505	700	90%	3.72	630
1550	700	90%	3.72	630
1575	800	94%	3.72	750
1625	1000	50%	3.72	500
1740	830	50%	4.46	498
1800	1070	52%	3.72	556
1890	1530	54%	2.23	496

Source: Peng (1958); Yang (1962); Qian and Guo (1985); Liu (2003)

of the growth occurring in the 18th century. Yet, of the 17th century, most of the increase was caused by a reduction of the copper content of the coin (see Table 11). The same is actually true for the 19th century, which also witnessed a small decrease in the copper coin to silver ratio.

For the population, part of their income obviously had to be paid in silver, such as taxes and long-distance goods such as silk. Also many of the other goods and products, even though paid in copper, were priced in silver, implying that people had to pay a increasing number of copper coins (but a decreasing amount of copper) for a products when priced in silver. Obviously, ordinary workers did not pay in silver, but rather in copper coins, which were then converted into silver by government officials. This meant they had to pay more copper coins for the same amount of silver, i.e. a decrease in income. Roughly, over the 17th century the copper coin/silver ratio increased with 16%, suggesting, at an equal level of wages in copper coins, that silver decreased their income equal to 16% times the share of their income spend in silver. Under this assumption that 50% of ordinary person's expenditure was done for goods and services priced in silver, this implies an income decline of ca. 8%. Given that, according to Shi, Xu, Ni and Van Leeuwen (2014) estimate the average income from 807 to 761 GK dollars to be just above subsistence, this decline must have had a severe impact on the Chinese economy. A similar exercise can be done for the 19th century. With an increase in ratio of 20%, an assumed, slightly larger, share in spending of silver of 60%, this implies a decrease of 20%*60%=12%.

For the international economy, however, once correcting for the reduction in weight and the share of copper, the actual copper to silver ratio was on the decline from the 17th century onwards. Hence, the picture changes in that we now find an actual stagnation or decline in the copper to silver ratio, suggesting that the Chinese economy was hardly capable of absorbing all the inflow of silver. In addition, we have to consider that the Chinese economy was silverizing, i.e. replacing alternative ways of payment for silver. Hence, even if the inflow of silver had taken place without actual inflation, this is still no sign that the economy had been expanding. Hence we agree with Von Glahn (1996a) that the inflow of silver was not enough to signal a growth of the Chinese economy.

5. CONCLUSION

Many discussions have taken place about the silverization of the Chinese economy. Some have argued that the (lack of) silver was a reason for recessions among the common people and a reason for dynastic change, while others viewed hardly any effect at all. Likewise, some claimed that the inflow of silver has been big, with China growing at such a speed it was capable to absorb all silver, while other have argued the contrary. Both questions, however, boil down to the theoretical model behind the money stock in China.

In order to look at these questions, our first step, however, is to analyse the inflow of silver in the Chinese economy and how it affected local society. We find a reduction after the mid-17th century, hence after the Ming-Qing transition. A similar decline occurred during the first half of the 19th century. Yet, the effect on local economy was directly small, with the majority of transactions being in copper, even though silver increased in the 19th century even though valued in silver.

Notwithstanding this difference, the majority of Chinese prices were reported in silver. This does not mean actual payments occurred in silver, but rather that, due to the unreliability of copper and paper money, silver became increasingly used as a unit of account. This implied that, when at the end of the 17th century bronze coins declined in value versus copper coins, people had

to pay increasingly more coins for the same amount of produce and, hence, saw their income decline.

This decline in the value of copper coins versus silver has been used by several authors to argue the Chinese economy was growing in the late Ming dynasty. After all, the Chinese economy was able to absorb large quantities of silver without declining in value versus the standard denomination copper. However, once correcting for the decline in weight and purity, we find that silver declined in value versus copper. This suggests that the inflow of silver was not completely absorbed by the economy. In addition, because China was still in the middle of the process of silverization, silver simply replaced many other means of exchange such as paper cash, textiles, and produce. Hence, we find little evidence in the inflow of silver that points at Chinese economic development.

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