

## Currency Competition in China Between 1850 and 1950

### A Case Study on Hayek's Denationalised Money?

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#### I. Introduction

It was in the 1970s, during a period of chronically high inflation in the western world, that F. A. Hayek proposed to abolish the currency monopoly of the government. In a series of papers (*Hayek* (1976a), *Hayek* (1976b), and *Hayek* (1977)), he argued that allowing banks and governments to supply different currencies free to the public would result in competition for stable money, which would reduce or even eliminate the undesirably high inflation rates. Although Hayek was not the first to publish on currency competition and despite the rather non-technical style of his articles, he caught the attention of a wider audience. In the discussion that followed his publications, several authors complained that due to the lack of historical experience with competing monies, both Hayek's idea and its critique remain highly speculative (*Honeck* ((1976), p. 10), *Hieber* ((1982), p. 153), and *Gerding/Starbatty* ((1980), p. 78)).

One possible historical situation of competing monies can be found in China between the late 19<sup>th</sup> and beginning 20<sup>th</sup> century, a situation often described by scholars as confusing, even chaotic. Using this episode, we will analyse the merits and limitations of Hayek's proposal.<sup>1</sup> The article

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<sup>1</sup> Existing studies on competing monies and currency substitution in China include *Chen et al.* (1995) for the Sung and Ming dynasties, and *Schenk* (2000) and *Peng/Shi* (2003) for the circulation of Hong Kong Dollars in mainland China. Typical historical episodes of currency competition or free banking can be found in England, Scotland, the United States, and Switzerland. For information on the latter cases, see e.g. *Vaubel* (1984b), *Edwards* ((1991), pp. 153–154), *Klein* ((1974), pp. 439–441), *Nedwed* (1992) and *Selgin/White* ((1994), pp. 1730–1732).

is organized as follows. The central ideas of Hayek's denationalised money are outlined in section two. Next, we describe the main characteristics of the Chinese monetary system in the second part of the 19<sup>th</sup> century. In section four we analyse elements of competition, while section five is devoted to the effects of competition on inflation and transaction costs. In the last section, we sum up our findings and evaluate Hayek's concept in light of the historical evidence.

## II. Hayek's Concept of Currency Competition

Hayek's idea is based upon the belief that the most important (if not the only real) reason for inflation lies in an excessive increase in the supply of money. Although technically possible, most governments and central banks would be politically unwilling or unable to control the money supply in a way that keeps prices constant.<sup>2</sup> As a solution, he proposes that people should be free to choose whatever currency they want to hold as a store of value, means of payment and unit of account. The banks, on the other hand, should decide on their own how much of their money they want to produce. In such a situation the public would, according to Hayek, demand only money from those banks which it expects to produce and maintain an adequate supply, i.e. a currency with stable purchasing power.

Two additional assumptions are necessary for an effective competition. First, banks are only allowed to issue their own, distinguishable money, denominated in individual, separated units of account. And second, the exchange rates between the different monies must be allowed to be flexible. In this case, all issuing banks would compete for stable money, since an inflating currency would soon depreciate against all other currencies and drive its emitter out of the market; the well-known "Gresham's Law" would be reversed and bad money would be driven out by good money. *Bernholz* ((1989), pp. 465–468) has initiated the term "Thier's law" for such a situation, which is normally observable only during advanced inflations, when governments lose the ability to prevent the substitution of their monopoly monies. If currency competition is not restricted by law, however, smaller differences in inflation rates should be sufficient

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<sup>2</sup> A strong incentive for an expanding money supply exists, since the profit of money production, the seignorage, falls to the government. This is especially true in case of fiat paper money, where the marginal costs of production are negligibly low, cf. *Hayek* ((1976a), p. 14).

for consumers to readjust their currency portfolios, creating thereby an incentive for the production of stable money.<sup>3</sup>

If an excessive money supply is accepted as the main reason for inflation, a point *Honeck* ((1976), pp. 16–43) rejects, several objections against the feasibility of efficient currency competition still exist. The main critique points can be categorised as follows:

- Demand side objections: The public would, at least temporarily, accept unstable money either because of prohibitively high information and switching costs or because of other useful properties (superior bank service, etc.) that keep the money attractive despite its depreciation.
- Supply side objections: Economies of scale in the production of money and network externalities would eventually lead to regional monopolies, merely replacing a public monopoly with private ones.<sup>4</sup> Even in the case of an oligopoly, competition would suffer from cartelisation resulting in a synchronic inflation to the profit of all producers.
- Political objections: The government or interest groups would urge the issuing banks to inflate their currencies or use the first opportunity to renationalise the money supply.

These objections caused some authors, such as *Honeck* (1976), to reject Hayek's idea. Others explained it as fruitful, at least as a theoretical point of reference (*Hieber* (1982), *Bernholz* (1987), *Howard* (1991), and *Issing* (2000)), while a last group (*Gerding/Starbatty* (1980), *Starbatty* (1982)) believed in its practical feasibility.

### III. China's Monetary System During the 19<sup>th</sup> and Early 20<sup>th</sup> Century

In China, three kinds of money existed traditionally: (strings of) copper coins, called cash, for ordinary day to day transactions, silver ingots,

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<sup>3</sup> The use of concurrent monies is normally suppressed by prohibition, cf. *Bernholz* ((2003), pp. 50, 61). This legal barrier and the existence of non-legal switching costs explains why only high inflation rates are normally sufficient to start a process of currency substitution, cf. *Dowd/Greenaway* ((1993), pp. 1184–1185).

<sup>4</sup> Money, or more precisely, the means of payment and unit of account functions of money, possess strong network externalities, cf. *Issing* ((2000), pp. 15–19) and *Vaubel* (1984a). *Hayek* ((1977), p. 109) himself argues about the possibility of regional monopolies as one possible outcome of currency competition.

called sycee, for larger wholesale or international transactions, and paper notes. Additionally, bullion and foreign silver dollars circulated and some of the external trade was conducted on a barter basis, using Chinese silk, gold, or porcelain.<sup>5</sup>

In the cash sector, the government acted as a supplier. Despite attempts toward empire wide standards, a wide range of different coins circulated, since the production was carried out decentralised in the provinces. Copper coins had a common round shape with a square hole in the centre. In almost every other aspect, such as weight, thickness, age, composition of copper, and issuer, they could differ. As a result of this diversity and the low intrinsic value of the coins, a number of coins had to be combined to fulfil the means of payment function effectively. The task of assessing their value and stringing them together was carried out by private cash shops (called ch'ien-p'u), which produced and modified strings, normally of some hundred or thousand coins. Despite its importance on the retail level, the copper sector is not at the centre of this study. Competition and private money production were more common in the silver sector and in the case of banknotes, where the focus of this analysis lies.<sup>6</sup>

While copper coins were minted by the central and local governments, the supply of silver coins differed considerably from that of western countries in the sense that the Chinese government did not produce silver money in larger amounts before 1889. Instead, two other sources for silver money existed: privately produced sycee and imported foreign coins. To understand the “tael-sycee-system”, some remarks about terminology are necessary:<sup>7</sup> The traditional Chinese unit of account for silver money was the “tael” (or “liang”), which quantified silver of a specific weight and purity. Various tael units existed, with names corresponding to

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<sup>5</sup> The scope of this survey is confined to mainland China, i.e. we exclude Hong Kong, Taiwan and Mongolia. Despite this limitation, it is necessary to keep in mind that the use of money in China was highly regional, with differences even between neighbouring territories. The extent of the empire was actually too huge to speak of a unique monetary system in the modern sense of the word. However, almost all Chinese territories possessed a common monetary structure, and this structure is what we want to outline.

<sup>6</sup> Further information about the Chinese copper sector can be found in *T'ang* ((1936), pp. 12–17), *Yang* ((1952), pp. 34–39), and *King* ((1965), pp. 51–68).

<sup>7</sup> A note on latinization; all Chinese and Pidgin English expressions like tael, sycee, kung-ku-chu, etc. are adopted as they appear in the English literature. Glossaries translating them into Chinese characters can be found in *Yang* ((1952), pp. 119–143) and *King* ((1965), pp. 316–320).

the region where they were predominant.<sup>8</sup> The physical silver money was called sycee and existed separately from the units of account. It was produced by private melting shops, called lu-fang in northern China and yin-lu in southern China, on behalf of banks. These shops formed silver bars into ingots of a specific form, similar to that of a shoe. These shoes (i.e. sycees) were then sent to an inspector of a public assay office, a kung-ku. The kung-ku marked the weight and pureness of the sycee with ink on it and transformed it through this act into money.<sup>9</sup>

In addition to sycee, foreign silver dollar coins began to circulate in China during the 16<sup>th</sup> century. Most of them came from the new world via the Philippines or Portugal-Goa-Macao and reached southern China in the form of Spanish Carolus Dollars and after 1850 in the form of Mexican Dollars. Starting from coastal regions such as Canton, they spread into the hinterland and were finally accepted almost everywhere south of the Yangtze. In addition to Latin-American or Spanish coins, American Trade Dollars, and Japanese Silver Yen circulated widely.<sup>10</sup> If damaged, the coins were traded according to weight, while intact and well-known coins circulated with a premium to new foreign coins. Both dollar coins and sycee were chopped, i.e. cut into pieces to test for counterfeiting or to pay a fraction amount. These pieces circulated alongside with uncut coins and were eventually melted down into new sycees.

Paper notes, the last type of money, were already used during the Tang dynasty (618–907). In the 19<sup>th</sup> and at the beginning of the 20<sup>th</sup> century, many small banks issued paper money with strong regional circulation, sometimes only in one city or even on one street. Notes had normally a copper or silver backing and were used to save transaction costs involved with payments in physical metal.<sup>11</sup> The value of the note depended on the expected stability of its issuing institute, i.e. the institute's ability

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<sup>8</sup> Like Shanghai tael or Nanking tael. Besides these, Kuping and Haikwan taels were important as units of account for imperial duties and taxes, cf. *Yang* ((1952), p. 47) and *King* ((1965), pp. 70–81).

<sup>9</sup> The sycee production could differ considerably, requiring sometimes the lu-fang's mark or no kung-ku at all. Further information on this topic can be found in *Leavens* (1930), *Leavens* ((1936), pp. 650–651), *Yang* ((1952), pp. 47, 80), *King* ((1965), pp. 72–74), and *Kann* (1992).

<sup>10</sup> The import of foreign silver dollars to China goes back to the 16<sup>th</sup> century, when silver dollars were exchanged by European merchants for Chinese goods, cf. *T'ang* ((1936), p. 23), *Yang* ((1952), pp. 48–50), and *Atwell* (1982).

<sup>11</sup> Paper money came under general use during the Sung dynasty (960–1279), cf. *Tullock* (1957). It reduced information and transaction costs, since no weighting,

and willingness to redeem the note into the agreed amount of silver or copper upon demand. In addition to the traditional Chinese banking institutions, the newly established foreign banks began to supply paper currencies after 1850.<sup>12</sup> Together with the unit of account, the nominal value and the name of the issuing institute were printed on the paper note. In the case of foreign issuers, at the very least, the latter information was printed in Chinese characters as well. Paper monies circulated with changing premiums or discounts over their face value, depending on the current reputation of their emitter. With the exception of the Hsien-feng period (1851–1861), no imperial notes were printed during the Qing dynasty in any substantial amount until 1905. There existed, however, a wide range of provincial and semi-governmental notes.<sup>13</sup>

#### IV. Elements of Competition

*“There certainly can be and has been money, even very satisfactory money, without government doing anything about it, though it has rarely been allowed to exist for long. But a lesson is to be learned from the report of a Dutch author about China a hundred years ago who observed of the paper money then current in that part of the world that ‘because it is not legal tender’ and because it is no concern of the State it is generally accepted as money.”*

*Hayek ((1976b), p. 31)*

Before analysing the competitive relationship between different kinds of currencies in China, we have to mention two restrictions regarding this study. First, copper coins were the most important and often the only medium of exchange in China’s interior, rural areas (*Kreps* (1934),

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chopping, or other assessment procedure was necessary as long as the note was in circulation, cf. *Suleski* ((1979), p. 645) and *King* ((1987), p. 7).

<sup>12</sup> Foreign banks specialized in financing foreign trade and underwriting government loans. Beside this core business, most issued paper notes. Information about foreign banks in China can be found in *Tamagna* ((1942), pp. 24–34) and *King* ((1987), pp. 15–17). Although a substantial amount of foreign banknotes circulated their importance can not be compared to that of Chinese banknotes. *T’ang* ((1936), p. 2) e.g. estimates that in 1935, Chinese banks (in Shanghai alone) issued 433,000,000 \$ worth of notes, while the total circulation of foreign notes amounted to 1,119,000 \$.

<sup>13</sup> For further information about the Chinese banking sector and Chinese paper notes, see *T’ang* ((1936), pp. 26–38), *Yang* ((1952), pp. 62–91), *Tullock* (1957), and *King* ((1965), pp. 91–114).

pp. 252, 277). As this paper exclusively focuses on silver money and banknotes, it may be a more adequate description of the monetary situation in China's urban areas and coastal provinces.

Second, prior to 1850, the last era of governmental money in China ended already around 1500 (*Chen et al. (1995) and Bernholz (1997)*). After 1500, banknotes and silver money were mainly supplied by private banks and dollars by foreign governments (*Tullock (1957)*). While this study could have investigated the time period starting from 1500 onwards, we confined ourselves to the period after 1850, since the English-speaking secondary literature, on which we had to rely on, covers mostly the 19<sup>th</sup> and 20<sup>th</sup> century. Though some evidence may be missing, it can be expected that the intensity of competition reached a peak during the period under review, since it coincides with the entry of foreign banks in China.

### *1. Competition and Diversity: The Situation Until the Beginning of the 20<sup>th</sup> Century*

China's monetary sector exhibited many features of a denationalised system until the beginning of the 20<sup>th</sup> century. A money producing enterprise, like a note issuing bank, faced competition not only from within its type of currency (i. e. paper notes) but also from all other types of currencies, be it dollar, bullion, or copper cash. The tael-sycee-system is of special interest, because it is one example of money produced by private enterprises. It worked since the principal (a bank or a merchant) split the money production between two agents (the lu-fang and the kung-ku). While the lu-fang produced the physical sycee, only the kung-ku transformed it into money through his assessment. His stamp on the sycee contained not only technical information like weight and pureness of silver, but also his name, making him liable for assessment errors. In addition to lu-fangs, foreign governments (through dollar coins), and, since the 1850s, foreign private banks (through banknotes) played a significant role in the Chinese money supply. Whenever the Chinese imperial court was involved, as it was in the copper sector, it acted on the level of provinces, not on an empire wide scale. The absence of governmental control over the money supply can be exemplified by the following citations from *Leavens* ((1936), p. 651): "In the United States and most western countries, the coinage of metallic money is strictly a government function. In China, however, neither the tael nor the Mexican dollar was regulated in any way by the government." and *Hsu* ((1910), p. 222): "But

I might mention that in our country any and every bank, either native or foreign, nay, even any and every firm which calls itself a bank, can and does issue notes, without any regulation whatever as regards the amounts issued, or other details. The free trade or laissez-faire principle is in full swing there". Although a rudimentary sort of regulation existed, there was, as *Brandt/Sargent* ((1989), pp. 35, 38) outline, neither a public deposit insurance nor a public lender of last resort. The citation of Hsu furthermore indicates that market entry was quite open – even for non-banks; an important aspect in regards to competition which is confirmed by *Tullock* ((1957), p. 406). In the silver sector, even the control mechanisms were privately organized. A kung-ku, albeit sometimes officially licensed, was ultimately responsible only to the banks and merchants of his community, not to the government. This was an arrangement that worked quite successfully, according to *King* ((1965), p. 79), who found a superior quality of sycee in regions where its production evolved with a kung-ku-chu as monitoring institution.<sup>14</sup>

The non-interference attitude of the Chinese government was, however, not limited to money production and supervision. Noteworthy and equally important for Hayek's idea of denationalised money, it extended to the internal and external exchange rate policy. The relative value of any specific currency as well as the exchange rate between copper and silver money depended upon market forces. When official exchange rates existed, no governmental agent stood ready to actually exchange currencies at those rates. Instead, local money changers and banks supplied the necessary exchange services, with a currency's relative price determined by its supply and demand situation as well as by the level of competition in the local banking sector. As the government enforced no legal tender, people could reject the settlement of debts with debased or damaged coins or notes of suspicious origin, urging for a discount over their face value.<sup>15</sup>

Given its decentralised nature, it is difficult to accurately classify China's monetary system during the 19<sup>th</sup> century. Especially because exceptions to the general picture of a free, competitive supply of different monies do exist. *King* ((1965), p. 105), for example, reports that non-Chi-

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<sup>14</sup> *T'ang* ((1936), p. 22) also notices in this regard "each ingot, before circulating, was weighted and assayed by the public assay-office, a very reliable institution free from state control, and possessing the full confidence of the business community".

<sup>15</sup> Cf. *Leavens* ((1930), p. 206), *T'ang* ((1936), p. 16), *Chang* ((1958), p. 4), and *King* ((1965), pp. 48–49, 57–58, 105).



nese institutions were prohibited (with one minor exception) to emit notes of less than five silver dollars and typically stayed away from the supply of notes convertible into cash. And *Leavens* ((1930), p. 207) argues that the use of foreign dollars was to some degree discriminated against, since they could be rejected in the settlement of tax liabilities. However, the absence of any noteworthy governmental money in the silver sector, the remarkable freedom in private money production, the circulation of huge amounts of foreign currencies, and the non-existence of an internal or external exchange rate policy point – despite all restrictions – to an exceptionally high level of competition and decentralisation. In contrast to the classical examples of free-banking there existed not even a centralised governmental coin standard nor an empire-wide unit of account.<sup>16</sup>

## 2. *Unification and Centralisation: From the End of the Qing Dynasty to the Founding of the People's Republic*

China's monetary system was highly regional during the 19<sup>th</sup> century, with few government involvement or regulation. This changed by the mid-20<sup>th</sup> century. Although different currencies were issued in mainland China up until 1951, the central aspect of Hayek's idea, the ability of the public to choose freely between currencies, no longer existed. This process of re-nationalisation started in the late 19<sup>th</sup> century and was characterised by the switch of money production from private into public hands, the move from full bodied metal coins to fiat paper money and token coins, and the effort on the part of the local governments to eliminate concurrent currencies within their jurisdictions. It coincided with deep political changes in China: the end of the Qing dynasty (1911), followed by the years of warlordism (1916–1928), the second Sino-Japanese war (1937–1945), and the civil war between the Nationalist Government (Kuomintang) and Communists.

During the last years of the Qing Dynasty, the Canton mint, founded in 1889, produced the first governmental silver dollar coins on a large scale. In addition to this mint, the central government established two note issuing banks, one in 1905, the other in 1907 (*Chang* (1958), pp. 3–4). The new Republic of China retained dollars and notes, and in 1912/14, a new empire-wide unit of account, the yuan silver dollar unit, was established. While further plans for a comprehensive unification and centralisation of

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<sup>16</sup> *Brandt/Sargent* ((1989), p. 34) come to a similar conclusion and describe China's monetary system during the period under review as one of free banking.

the monetary system failed, due to the military and political problems of that period, the central and provincial governments became more and more involved in the money supply process, strengthening their influence in the banking sector.<sup>17</sup>

It was, however, not until the early 1930s, that the Nationalist Government was finally strong enough to launch a great reform. The tael was abolished by law in 1933, and a tax on silver exports was established in 1934; one year later, China went off silver. A new centralised paper currency, the Chinese National Currency (CNC, also called fapi), was introduced with full legal tender status. The use of silver for monetary purposes was prohibited, its holdings were nationalised and a reserve was built to peg the currency to the British Pound.<sup>18</sup> The issue of paper money by private banks was stopped, and the notes exchanged into CNC. Though the formal right of foreign banks to issue paper money remained untouched, the actual circulation of their notes declined because of Chinese pressure, and the issuing rights finally expired in 1942, one year before the end of extraterritoriality (*T'ang* (1923)).

While different currencies remained in use during this whole period, we conclude that only the situation before 1935 can be described as one of denationalised money<sup>19</sup> as the government's attitude towards the monetary system changed. A decentralised money supply with private money production was no longer seen as appropriate for China, rather inferior to western concepts of unique national systems, especially in light of the administration's increasing dependence on the issuance of paper money to finance budget deficits. In the Republic of China, a mix of nationalist sentiments and transaction cost arguments was employed to discredit the old system. A strong appreciation in the world price of silver, caused by the U.S. silver purchase program of 1934, and its deflationary effects on the Chinese economy were used as the final argument for introducing a unified paper currency.<sup>20</sup> The new laws prohibiting the

<sup>17</sup> Cf. *Suleski* ((1979), p. 650) and *T'ang* ((1936), pp. 18–19, 25).

<sup>18</sup> Cf. *Chi* (1937), *Yang* ((1952), p. 70), *Chang* ((1958), p. 7), and *Leavens* (1936).

<sup>19</sup> The choice of 1935 as the end of the pure denationalised system is to some degree arbitrary; at that time, currency competition was already abolished in some Chinese territories, while in other areas, competing monies remained in circulation until the founding of the People's Republic and beyond.

<sup>20</sup> Japan had successfully adopted a unified monetary system in 1871 – an example that many Chinese wanted to follow, see *Hsu* (1910) and *T'ang* (1923). While a majority of researchers and commentators, among them *Bloch* (1938), *Kreps* ((1934), p. 274), *Hunsberger* ((1938), p. 252), and *Friedman* (1992) believe that the appreciation of silver strongly affected the Chinese economy, *Rawski* (1993) and

use of non-governmental money hampered competition, even if they were not always enforced. This is especially true for the public quotation of prices and exchange rates. While foreign or private currencies could still serve as store of value, their use as means of payment became increasingly limited and risky. Furthermore, to damage the reputation and value of an opponent's currency was seen as a legitimate weapon of warfare. Japanese, Nationalists and Communists used counterfeiting and redemption of paper notes on a large scale to fight against the economic backbone of their enemies. Under these circumstances, productive competition that fostered the issue of stable money suffered.<sup>21</sup> It has to be emphasised, however, that the outlined historical monopolisation process in China was no result of the competitive system itself. Though economies of scale arguments played a role, centralisation and monopolisation were mainly driven by political (especially fiscal) motivation.

## V. Effects of Competition

### 1. Effects on Inflation

If Hayek's thesis holds, no sustained inflation and no grosser sort of debasement should be observable in 19<sup>th</sup> century China, contrasted by a worsening inflation record during the period of re-nationalisation. Verifying this empirically is somehow complicated by the lack of complete and reliable time series on inflation and money supply. Although the high inflation and hyperinflation after 1937 is comparably well investigated (*Huang* (1948), *Chang* (1958), *Chou* (1963), and *Schenk* (2000)) and some data even reach back into the late 19<sup>th</sup> century, it has to be empha-

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*Brandt/Sargent* (1989) negate such effects. Instead, *Brandt/Sargent* ((1989), p. 31) conclude that this argument was mainly an alibi for introducing a government monopoly for fiscal purposes.

<sup>21</sup> Cf. *Chang* ((1958), pp. 21–24), *Miyashita* ((1966), pp. 17–18), and *Suleski* ((1979), pp. 647–649). Yet, it would be misleading to overestimate the administrations' ability to completely unify the money supply. At least at the beginning, monopolisation was often a gradual and slow process and in some areas simply not possible, cf. *Kreps* ((1934), p. 251) and *Hunsberger* ((1938), pp. 256–257). The most prominent exception was the circulation of Hong Kong Dollars in southern China, where geographical proximity to the mainland and well established trade and smuggle routes led to a constant supply of Hong Kong Dollars throughout the entire 20<sup>th</sup> century, see *Schenk* (2000), *Peng/Shi* (2003). Regarding the transformation from a denationalised to a nationalised system, it is therefore better to think of a shift towards a monopolised system rather than a one time jump from one extreme to the other.

sised that these are only rough and biased measures of the actual historical developments. Huge regional price differentials existed in China, lowering the explanatory power of aggregated indices, which furthermore mostly included official prices, which were often below the actual (black) market prices.<sup>22</sup> An additional problem arises since the connection between the individual physical currency, be it sycee or dollar coin, and its unit of account was not necessarily a fixed one. Even if price indices measured in terms of taels or dollar units of account remained constant, their connection to the actual physical sycees, coins, and banknotes could fluctuate. To cope with these problems we supplement our data with non-empirical evidence.

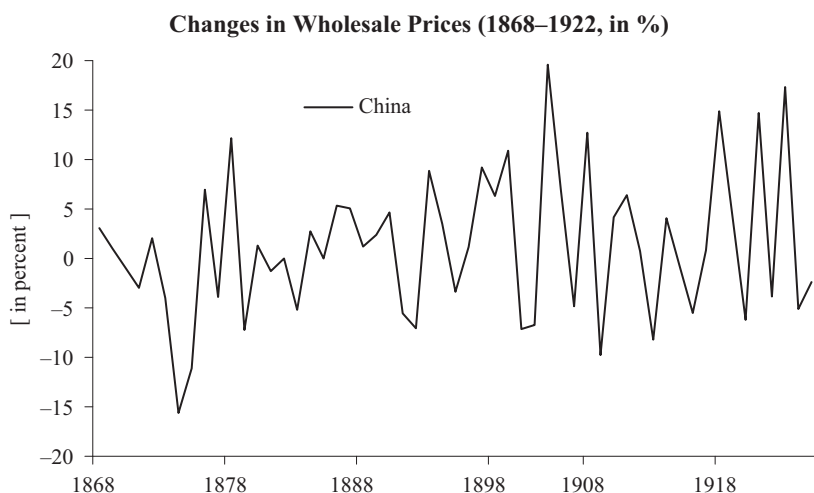
Figure 1 shows the evolution of wholesale prices during the denationalised period. Taking them as a proxy for the underlying development of the general price level, one observes strongly fluctuating rates around a moderate trend of 1.1 percent (1868–1922) and of 2.1 percent (1920–1932). These data are in line with remarks by *T'ang* ((1936), pp. 8, 11), *Chang* ((1958), pp. 8–9), *King* ((1965), pp. 219–220), *Glahn* (1996), and *Brandt/Sargent* ((1989), p. 44–45), according to which the general movement of Chinese prices was ultimately determined by the world price of silver, by the world prices of important trade commodities and by agricultural production cycles. Regarding money induced inflation, we found only two remarks about excessive money supply during the denationalised period: one by *Hsu* ((1910), p. 223) with the complaint that due to private money production, “coins are being forced into circulation daily in vast quantities. These coins, together with large sums of notes, cause inflation of prices”. The other remark concerns the excessive money supply during the Hsien-feng period.

While Hsu's remark can be questioned (he was a fierce advocate for monetary unification), the Hsien-feng inflation deserves closer attention. Urged by the high military costs during the Taiping rebellion (1851–1864) the empire began to issue huge amounts of paper notes and debased copper coins in the area around Beijing. In the mid 1860s, this money was already next to worthless (*Yang* (1952), p. 68, and *T'ang* (1936), p. 31). Several points are noteworthy here.

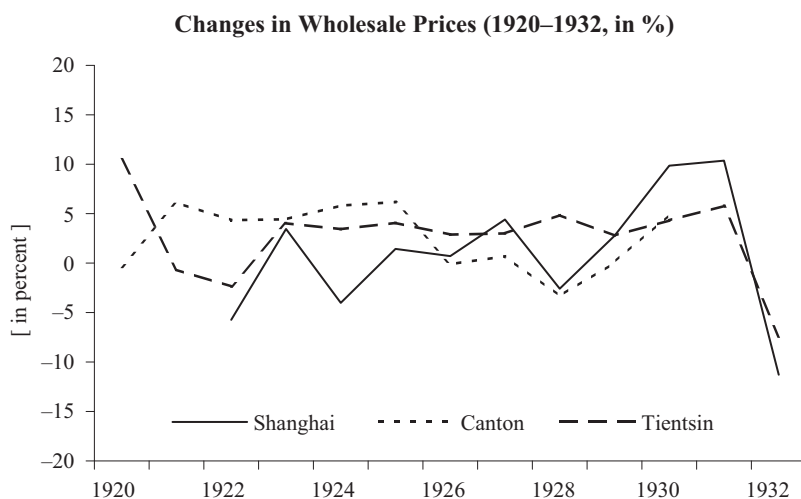
First, this loss of monetary stability occurred right after the government heavily interfered in the money supply for the first time since the

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<sup>22</sup> For a discussion on that topic, cf. *Kreps* ((1934), p. 255), *Huang* ((1948), p. 563), and *Chou* ((1963), pp. 8, 16–17).



Source: Warren and Pearson (1933, pp. 147–148)



Source: Kreps (1934, p. 287)

*Figure 1: Inflation During the Denationalised Period*

early 16<sup>th</sup> century. As banknotes were issued to solve an urgent fiscal deficit, they missed an appropriate reserve backing and were convertible only to a limited and shrinking extent. Second, quite understandable the public did not voluntarily accept this money at par. King ((1965), p. 155),

for example, writes that rather soon “the government had in reality abandoned any policy but one of keeping the notes in circulation by the terms of various punitive edicts.” Since the administration used considerable force to promote the use of its money, the Hsien-feng inflation should be interpreted as a temporary and geographically limited government take-over of money production under restricted competition and should not be taken as an example of a failed private and competitive money supply.

Further inflationary periods surely existed, and as *Leavens* ((1936), p. 651) and *T'ang* ((1936), p. 20) report, governmental copper mints possessed a reputation for producing debased coins of low quality. We found, however, no lasting inflation in the silver and banknote sector when active competition existed.<sup>23</sup> The following remarks point more in the direction that the competitive supply of different currencies acted as an effective protection against over-issue. *Chou* ((1963), p. 190), for example, writes about Chinese inflation before 1935: “The banks had virtually a free hand in managing their note circulation. Since good management and free convertibility were necessary conditions for a wide acceptance of banknotes, the private-issuing system, functioning under the principal of free competition, was fairly satisfactory.” And *Tamagna* ((1942), pp. 140–141) observes: “Little, if any, conscious and effective effort for a monetary policy was exercised by the Government banks before 1934. Up to that time the banks limited themselves to a most conservative policy of currency management; consequently, their notes gained the confidence of the people and were freely circulated at par with silver.” When banks tried to maximise their earnings by over-issue, consumers reacted, as the following remark by *Chang* ((1958), pp. 5–6) illustrates, “some provincial banks, in the belief that the seal of the provincial government was sufficient to maintain full value, increased their issue without restriction and even attempted to compel the people to accept inconvertible notes. This resulted in depreciation of these notes and the creation of strong popular resistance to accepting them.” And further “sound currency gradually drove the unsound notes of the provincial banks out of circulation”.

These citations indicate that competition represented not only a very real constraint on the emitter’s ability to issue notes excessively, they

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<sup>23</sup> Due to its non-involvement, the Chinese government even helped to disclose debasement in the silver sector when the control mechanisms of the private sector failed. *King* ((1965), p. 79) for example reports that collusions between lu-fangs and kung-ku-chus were often disclosed by governmental tax collectors.

furthermore highlight that the competitive supply of different currencies helped to preserve the convertibility of banknotes. Since inconvertible fiat money has been, as *Bernholz* ((2003), pp. 7–11, 14–15, 21–39) points out, a necessary condition for all hyperinflations up to now, it can be expected that the ability to demand for redeemable paper notes contributed strongly to the protection of purchasing power during the denationalised period.

As monopolisation and the suspension of convertibility went hand in hand in China, it is crucial to emphasis here that the Chinese experience with freely competing currencies described in this article took place in a currency system based on precious metal and offers no insights concerning competition between issuers of fiat money.

The discussion up to now focused on paper money, of which the inflationary potential is especially high. Regarding competition in a monetary system with metal coins, two objections arise. First, although limited debasement is feasible, it would not be possible to exploit the money supply as crudely as in the case of banknotes. As the inflationary potential is already limited, maintaining a competitive system would not be worth its costs. Second, in a situation of limited inflation, the inflationary differentials would be too small to activate any consumer reaction.

Remarks by *Leavens* ((1936), p. 651) and *T'ang* ((1936), pp. 23–24) contrast the latter argument. According to them, Chinese individuals were sensitive enough to reject metal coins of suspicious origin, a point the Chinese government had to notice after it started to issue its first Dragon Dollars. Evaluating whether or not a competitive system is worth its costs (which are discussed in section V.2) is a more difficult question. However, it should be mentioned that one should avoid limiting the positive aspects of a competitive system exclusively to the preservation of purchasing power alone. Unlike rule-based monetary policies, such as the gold standard or monetary targeting, competition promises better money in more general terms, as it does not only tie down the hands of the government but also acts as a “discovery procedure”. This point can be exemplified by observing the competitive relationship between foreign dollars and sycee that led to the transfer of modern production technology to China.<sup>24</sup> As mentioned earlier, both types of currencies were from

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<sup>24</sup> Competition fosters the use of innovative techniques and the production of more convenient goods, since innovation is one way to stay in the market. The relationship between competition and innovation is extensively discussed in *Hayek* (1969) and *Hayek* (1978).

a Chinese point of view free of governmental control and comparably stable. However, foreign dollars generally possessed a higher uniformity than sycee. Furthermore, they had a lower silver value, which made them more convenient for ordinary, day-to-day transactions. In accordance with the idea of currency competition, this led to a gradual substitution of sycee and to their complete disappearance in some Chinese cities by the end of the 19th century.<sup>25</sup> While the western advantage led at first to a substitution of the native currency, it also stimulated a transfer of modern production technology. Dollars and banknotes produced by the newly founded Chinese mints and printing plants possessed a higher quality and some of the former substitution could consequently be reversed (*T'ang* (1923), p. 111, and *Young* (1931), p. 684).

To contrast our findings under competition, we now turn to the Nationalist areas after monopolisation. Figure 2 reveals how strongly the currency reforms of the 1930s affected the price level. It shows money supply and inflation before and after the introduction of a single legal tender in 1935.<sup>26</sup> Although many events contributed to this inflation (aggregate supply in free China was adversely shocked by the loss of the industrial centers in the east, while the inflow of refugees from the occupied territories pushed demand up; the situation worsened as a result of bad harvests, etc.), the loss of purchasing power resulted mainly, as in the case of most severe inflations (*Bernholz* (2003), pp. 69–74), from the financing of a growing public budget deficit through note issue.<sup>27</sup>

After the outbreak of war with Japan, the central government's already chronic deficit worsened due to growing (military) expenditures and shrinking tax revenues. The accelerating rates of inflation alone ad-

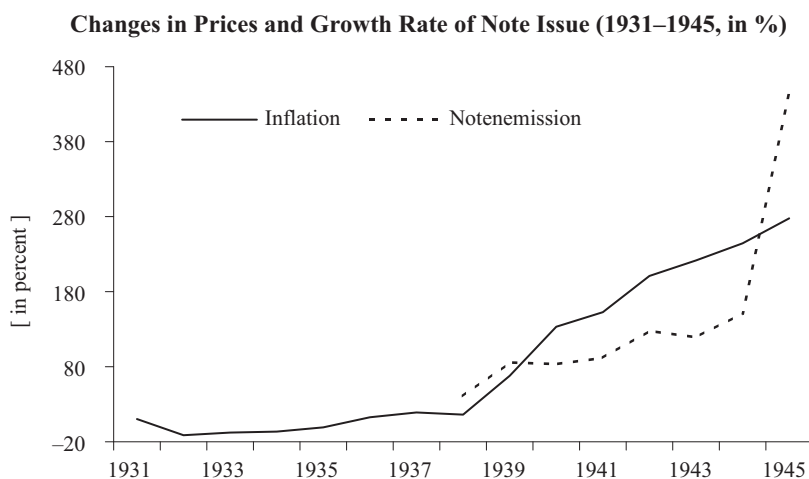
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<sup>25</sup> Cf. *Hsu* ((1910), p. 231) and *King* ((1965), pp. 69, 81–90, 168). During the same period, a dollar unit of account began to replace the tael in the coastal regions, and some Chinese cities began to imitate western units of account by creating new currencies based on the decimal system, cf. *Yang* ((1952), p. 49) and *Suleski* ((1979), p. 644). An observation of *T'ang* ((1923), p. 111) is very instructive in this regard. He states that the actual silver content of foreign coins was often a less important factor for the determination of their exchange rate, compared to the "popular fancy for this or that coin". *King* ((1965), pp. 45–46) confirms this statement, explaining that the lower information costs for dollars that were known to be reliable led to their wider acceptance. Such a brand advantage could lead to premiums up to 25% over the intrinsic silver value.

<sup>26</sup> In 1935, notes from the three governmental banks Central Bank of China, the Bank of China, and the Bank of Communications, were declared single legal tender, cf. *Chang* ((1958), p. 7).

<sup>27</sup> Cf. *Tamagna* ((1946), pp. 613–614), *Chou* ((1963), p. 4), and *Huang* ((1948), pp. 563–564, 574–575).





Source: Kreps (1934, p. 287)

*Figure 2: Inflation and Note Issue During the Re-nationalised Period, 1937–1945, Free China*

versely affected the government's budget in real terms.<sup>28</sup> The situation eased a bit after Japan's surrender. However, soon the government's deficit and money supply grew again beyond all means, as a result of the restarting conflict between Kuomintang and Communists. The developments in 1946 and 1947 are no longer depicted in Figure 2 as they exceeded, with an inflation rate over 1500%, the limits of the scale. Understandably, people were no longer willing to accept this money and China entered the last phase of the inflationary cycle, during which people turned to copper cash, barter, or substituted CNC with other currencies despite harsh legal penalties.<sup>29</sup>

To sum up: from 1850 to the beginning of the 20<sup>th</sup> century, inflation rates in China varied widely in the short run but followed in the medium

<sup>28</sup> Cf. *Chang* ((1958), p. 108). This situation is referred to as "Tanzi's Law", cf. *Bernholz* ((2003), p. 71).

<sup>29</sup> According to *Schenk* ((2000), p. 746), note issue between 1945 and 1948 jumped from 1,032 billion to 374,762 billion CNC\$. The Kuomintang reacted with a currency reform on these developments. However, the new gold yuan currency that was issued in 1948 suffered from a loss of confidence in the administration from the very beginning, and the attempt failed, cf. *Kaim* (1948). As in many historical cases, inflation in China followed more or less strictly an inflationary cycle of four phases. These cycles and their historical evidence are extensively discussed in *Bernholz* (1989) and *Bernholz* ((2003), pp. 114–134).

run a very moderate, positive trend. After 1935, and in the case of warlord areas<sup>30</sup> even before that, inflation showed a clear and strong upward trend that often ended in high or hyperinflation. We interpret these (stylised) facts in the following way. Currency competition, more common in the late 19<sup>th</sup> century, helped to stabilise purchasing power, as it forced emitters to preserve the redeemability of banknotes making it possible to reject or discount “bad” coins and notes. While individual currencies could fail and did fail, the overall system produced comparably stable monies. In the course of the monopolisation process during the 20<sup>th</sup> century, consumers lost their ability to punish fraudulent producers consequently, most administrations, now responsible for the management of currencies, abused their monopoly powers. This interpretation is supported by the fact that a similar pattern of monopolisation, followed by an excessive issuance of fiat money and hyperinflation, can also be found in the Communist areas and in the Chinese territories occupied by Japan.<sup>31</sup>

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<sup>30</sup> In the warlord era, the developments in the Fengtien province, as described in *Suleski* (1979), can be used as a case study. There, General Chang Tso-lin began, like many others, to centralise the issue of money in his territory. Prior to 1917, various notes of local government bodies circulated in Fengtien alongside foreign currencies. After 1917, pressure and restrictions against the use of foreign notes began to arise and in 1924, the provincial government merged local banks together for a further unification of the money production process. In the same year, all convertible notes were called back in exchange for non-convertible Fungtien Dollars, first issued in 1918. Already one year later, the money supply quadrupled and in 1928, the currency collapsed as a result of over-issue. According to *Kreps* ((1934), p. 250) and *Suleski* (1979), the amount of Fengtien dollars outstanding increased between 1925 and 1929 from under one hundred million to 2.25 billion. A very interesting aspect in this context is that the government was actually able to produce and maintain a stable currency as long as concurrent monies circulated. Up until 1925, the local currency could even improve its reputation by sticking to a more conservative issuing policy. Only after the centralisation of local currencies and the repression of foreign currencies did money supply soar, with disastrous effects on the price level.

<sup>31</sup> In the territories occupied by Japan two major currencies existed, one issued by the Federal Reserve Bank for North China (1938–45) and one issued by the Central Reserve Bank (1940–45) for South and Central China. Soon after their introduction a monopolisation process began during which Japanese notes were declared single legal tender and concurrent currencies were confiscated. Assessing the purchasing power of these currencies to *Chou* ((1963), p. 2) writes that they experienced an inflation rate that “at first was comparable to, and later became worse than, the inflation in the fapi area” [i.e. nationalist note area]. Though *Ahlers* ((1945), p. 333) mentions that the loss of purchasing power in the last war days predominately reflects a currency panic, most commentators agree that the high inflation rates in the years before 1945 were due to the over-issue of banknotes. *Tamagna* ((1946), p. 618), for example, reports that between 1941 and 1945 note issue of the Central Reserve Bank increased by 150,000 per cent, and in the

A possible argument against our interpretation could be that it compares apples with bananas, as China faced unprecedented political and military troubles during the second period. Consequently, inflation could be better explained as a result of the (civil) wars on Chinese soil. While it is un-questionably right that the main motivation behind the excessive money supply lay in the fiscal burden of war finance,<sup>32</sup> monopolisation was still a necessary condition for the success of this inflationary tax. Furthermore, one has to remember that the late 19<sup>th</sup> century was not a peaceful time either. It saw the opium wars (1839–1842 and 1856–1860), the Taiping rebellion (1851–1864), and the Boxer uprising (1900–1901). Comparing the rise in the price level in the mid 20<sup>th</sup> century with the period before 1935, we can thus claim that competition and decentralisation provided a rather successful restriction on excessive money supply.

## *2. Information and Transaction Costs in the Competitive System*

*“The total lack of system and an unparalleled confusion have been, until recently, characteristic of currency conditions in modern China. Germany a century ago, with its numerous coinages, each circulating in its own principality, was called the paradise of money-changer, but that was simplicity itself in comparison with China”*

*T'ang* ((1923), p. 109)

Money, as a social institution, is often compared to language as its utility increases together with the rise in the total number of people sharing it as a medium of exchange and unit of account. A competitive supply of different currencies within one jurisdiction forces people to take into ac-

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case of the Federal Reserve Bank by 3,000 per cent. Financing budget deficits through an inflationary increase of paper money was again the central motivation behind these expansions. Further information regarding money in the territories occupied by Japan can be found in *Steward* (1939), *Bloch* (1939), and *Chang* ((1958), pp. 20–24).

<sup>32</sup> One could go even as far as Milton *Friedman* ((1992), pp. 79) did in remarking that faced with the burden of war finance, the step towards a monopolised paper standard was inevitable. In a situation without an effective tax system, an inflationary tax may be even efficient in economical terms, cf. *King* ((1965), p. 144). Although this may hold in the Chinese case, we ignore these considerations in the following and treat inflation as an economically and socially undesirable phenomenon.

count multiple exchange rates, to calculate cross-rates, and to exchange one kind of currency for another. Such often stated disadvantages of currency competition are also observable in 19<sup>th</sup> century China.

Although a wide range of different money suppliers existed, and their monies actually circulated in the empire, not every currency was accepted in a specific region or by a specific trade partner. Foreign dollars, sycee or banknotes of different areas often had to be first exchanged into local currency. Even the money earned in a city was not necessarily the money needed to buy goods and services in that same city. Big players, such as the government in tax matters, could dictate the terms of trade. This situation led to substantial transaction and information costs. All parties involved, such as money changers, *lu-fangs* and *kung-kus*, made their living with the services needed to maintain the system. *Kreps* ((1934), p. 252), for example, while discussing the problem of transaction costs, repeats a Chinese adage according to which “ten exchanges eat up one’s capital”. And *T’ang* ((1923), p. 111) and *King* ((1965), pp. 73) give examples of fees of 1.1% on the nominal silver value to form bullion into sycee as well as additional fees for re-melting. In case of Kuping taels, officials charged a melting fee, even when no re-melting was carried out (*King* (1965), p. 111). While these transaction costs had the side effect that bankers and money changers formed a powerful lobby that resisted pressure towards a centralised governmental money supply (*T’ang* (1936), p. 24, and *Brandt/Sargent* (1989), p. 35), they represented for all non-bank customers simply an additional burden on their transactions.<sup>33</sup>

Moreover, aside from direct fees, costs of information were considerable. In addition to the huge number of units of account available,<sup>34</sup> even one specific tael unit could differ from place to place, as in the case of the important Haikwan tael. Although exactly defined, the actual conditions for settlement in sycee or dollars varied widely and were subject to bargaining and complaints. Other problems of semantic nature caused

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<sup>33</sup> These assessing and melting costs could occur multiple times and were not limited to the silver sector. According to *Suleski* ((1979), p. 645), the service of an assessor was often needed when cash payments were settled. *King* ((1965), p. 57) reports that butchers had to pay money changers, since they normally received strings of 990 good cash coins but needed strings of 985 coins of mixed quality to pay for their ingredients.

<sup>34</sup> *T’ang* ((1923), p. 110) reports about more than 100 different tael units in the whole empire, *Hsu* ((1910), p. 231) and *Kreps* ((1934), p. 250) about 150 and 170 respectively.

further confusion. A Chinese character could sometimes mean a weight, a unit of account or the physical coin or everything together, depending on the specific community. According to local customs, a debt of 100 taels could even be settled by paying 98 (*T'ang* (1923), p. 111). All this put uncertainty on payments and contracts and was seen as a barrier to trade, especially by foreign merchants who already had to bear a high exchange rate risk.<sup>35</sup> Banknotes solved some, but not all of these problems, because they postponed the settlement and assessment costs only to the date of redemption. These costs and the substantial market power they gave to insiders led to a call for monetary reform and a unique Chinese currency at the beginning of the 20<sup>th</sup> century.<sup>36</sup>

The frequent bank runs, mentioned by *Hsu* ((1910), p. 222), furthermore point to an often cited objection against currency competition, stating that issuing banks would constantly face time-inconsistency problems between a short term runaway profit followed by bankruptcy and a long term oriented conservative issuing policy (e.g. *Selgin/White* (1994), p. 1734). Although the over-all price level remained, as shown, relatively constant, individual issuers could and did fail.

Finally, a last point on the effects of competition on paper money has to be mentioned. As mentioned earlier, inconvertible paper notes did not successfully compete against convertible notes. One result of the competitive system in China therefore was that the tie between previous metal and notes could be sustained.<sup>37</sup> While competition served as a protection against excessive note issue and inflation, it came with the difficulties inherent in every commodity standard: namely, short term fluctuation of the price level with the price of the underlying metal. This problem was especially severe in China, since the country possessed only few silver mines and depended mainly on the imports of precious metal (*T'ang* (1936), p. 20, *King* (1965), pp. 219–220). Whether or not Figure 1 (with changes in the price level up to +20% and –15%) overestimates the real developments, year to year fluctuations were substantial. Moreover, the existence of a dual metallic standard without fixed exchange rates between copper and silver money posed a high risk and generated addi-

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<sup>35</sup> China remained on silver, while all major trading partners were under gold standard, cf. *Hsu* ((1910), p. 227), *T'ang* ((1923), pp. 114–115), *Remer* ((1926), p. 593), and *Friedman* ((1992), p. 68).

<sup>36</sup> Cf. *Hsu* (1910), *T'ang* (1923), and *King* ((1965), pp. 211–228).

<sup>37</sup> *Nedwed* ((1992), pp. 34, 37–56) and *Dowd/Greenaway* ((1993), pp. 1184–1185) differentiate between competitive systems with metal and fiat money and negate the possibility of an efficient currency competition in the latter case.

tional costs for all who received payments in one kind of metal but had to meet their obligations in the other metal.<sup>38</sup>

## VI. Conclusion

In this paper, we analysed elements and effects of competition in China's monetary system between 1850 and 1950. While we cannot claim completeness, we found a general pattern that fits comparably well with Hayek's idea of denationalised money for the period up to the beginning of the 20<sup>th</sup> century. Afterwards, the monetary situation in China was increasingly characterised by a process that evolved towards centralisation and monopolisation. Comparing the inflation records of both sub-periods, we find confirmation of Hayek's central thesis, for competition actually did help stabilise the purchasing power of currencies. During the first and competitive period, the price level showed (in the medium term) a very moderate inflation, a situation contrasted by the accelerating inflationary developments after centralisation. However, although monopolisation was surely a necessary condition for the high and hyperinflation in the mid 20<sup>th</sup> century, the period before 1935 was no Hayekian paradise either. As a commodity standard, the competitive system produced strong short term fluctuations in the price level. With frequent failures of individual issuing banks and existing switching costs, it would be furthermore inappropriate to describe the Chinese competitive money supply system as a perfectly smooth-working mechanism. Especially since substantial transaction and information costs existed, as the critics on currency competition rightly foresaw. The Chinese system was, however, open towards innovations and produced, despite all its deficits, comparably low inflation rates.

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<sup>38</sup> This problem was especially severe for peasants who had to pay taxes and debts in silver but received only copper money for their crops, cf. *T'ang* ((1936), pp. 14–16).

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## Summary

### Currency Competition in China Between 1850 and 1950 A Case Study on Hayek’s Denationalised Money?

In this article, we analyse whether China’s monetary system between 1850 and 1950 can be compared to F. A. von Hayek’s idea of denationalised money. While different currencies existed and competed during the whole period, we find that



only the first part, until the beginning of the 20<sup>th</sup> century can be characterised as a one of denationalised money. We furthermore find evidence that the decentralised supply of competing monies acted as a protection against money induced inflation as it helped to preserve the convertibility of banknotes in precious metal. However, this advantage of currency competition came along with considerable transaction and information costs. (JEL E42, N15, O53)

### **Zusammenfassung**

#### **Währungswettbewerb in China zwischen 1850 und 1950:**

#### **Eine Fallstudie zu Hayeks entnationalisiertem Geld?**

Der vorliegende Aufsatz behandelt die Frage, ob sich das chinesische Währungssystem zwischen 1850 und 1950 mit der Vorstellung des entnationalisierten Geldes nach F. A. von Hayek vergleichen lässt. Obgleich unterschiedliche Währungen während des gesamten Untersuchungszeitraums in China existierten und untereinander im Wettbewerb standen, lässt sich nur die Situation bis zu Beginn des 20. Jahrhunderts mit der Vorstellung eines denationalisierten Geldangebots in Übereinstimmung bringen. Darüber hinaus finden sich Hinweise, dass das dezentrale Geldangebot von im Wettbewerb stehenden Banken Schutz vor Inflation bot, indem es zur Beibehaltung der Konvertibilität von Banknoten in Edelmetall beitrug. Diesem Vorteil des dezentralen Systems standen jedoch beträchtliche Informations- und Transaktionskosten gegenüber.