

## Chapter 6

# Silver, Cowries, and Copper: Economic Reorientation

## Introduction

The Chinese absorption of Yunnan's administration and identity was accompanied by a regional economic reorientation that emerged to serve the imperial economy during the Ming-Qing period. This chapter will first discuss the production of silver in Yunnan, which played an important role in the Ming Empire. The mining industry, fed by the Ming silver production and Qing copper production, injected new life into the Chinese empire while influencing labor distribution, industrialization, and urbanization, and creating a regional economic structure. 1

Second, this chapter will examine the replacement of cowry money by copper coins during the Ming-Qing transition. While examination of the cowry monetary system in Yunnan illuminates the ways in which global and regional forces combined to shape local development, its collapse symbolizes Yunnan's economic reorientation as the Chinese monetary system began to supersede the Indian Ocean practice of trading in cowries. During the Qing period, immigrants flocked to the Southwest, increasing the Han numbers from one-third of Yunnan's population in the Ming period to about 60 percent in 1850. For the first time, Han Chinese outnumbered all non-Han peoples, and, in general, ethnic groups truly turned into minorities. This demographic breakthrough has basically remained. 2

Finally, this chapter will review the copper administration in the Qing period, which uncovers the significance of Yunnan in the Chinese world-economy. Yunnan was the only major copper source for the imperial minting project throughout the eighteenth century. Hence, the Qing state issued detailed regulations concerning the production and transportation of copper. As a result, the copper mining industry was incorporated into imperial administrative hierarchy. In this manner, the copper mining industry may shed light on William Skinner's paradigm of Yun-Gui macroregion. 3

## Silver Mining in Yunnan and the Ming Economy

Yunnan abounds in metal resources, including gold, silver, copper, tin, and lead, to list a few. This was known to the Chinese as early as the Han Dynasty. Some scholars have already pointed out that bronze in Yunnan might have been shipped to the Central Plain over 3,000 years ago, and have been made into the fine bronze items by the Shang and Zhou people.<sup>1</sup> Like bronze, silver was a famous local product in Yunnan, and was desired by the Chinese because of its value and elite symbolism. 4

Ban Gu, who lived in the first century, had mentioned silver in Yunnan several times, and he particularly stressed its high value. One example he gave was *zhutiyin*, namely, silver mined in Zhuti County (Zhaotong), which was valued over one and half times as much as other kinds of silver.<sup>2</sup> Early sources such as *HHS* and *HYGZ* both list silver as a local product together with bronze, gold, and tin.<sup>3</sup> *HYGZ* even states that officials in western Yizhou Prefecture (Yongchang area) could obtain a fortune for ten generations.<sup>4</sup> Their wealth should be accredited to both the trade through the Southwest Silk Road and mineral resources such as silver and gold. When the Shu regime conquered Nanzhong, silver as well as other local resources contributed a great deal to the regime's frequent military campaigns against the northern Wei regime. For example, *HYGZ* reads that the mining of Zhuti silver was an important source of wealth for the Shu.<sup>5</sup> Such a statement was supported by another source, which claimed that several dozen silver sites in Nanzhong (Yunnan) paid yearly tributes to the Shu.<sup>6</sup> Although available documents cannot produce a map of silver production in Yunnan at the time, we can assume that silver mining was ongoing on the grounds that silver has been listed as a local product in the earliest known records. 5

Silver mining continued during the Nanzhao and Dali periods. *Man Shu* listed silver as a local product, and further stated that strict regulations were imposed on silver production (*jinji shen yan*).<sup>7</sup> Indeed, Nanzhao imposed heavy taxes on gold mining, requiring miners to hand over 60 to 70 percent of their output to the state.<sup>8</sup> It may be the same case in terms of silver mining. The growth of silver production in this period is also reflected in religious activities. Many Buddhist silver statues and works of the Dali Kingdom were found in 1971.<sup>9</sup> Silver utensils were also used by Nanzhao elites.<sup>10</sup> 6

The Yuan Dynasty taxed silver mining as well. The Office of Silver Mining (Yinchangguan) was created, and silver taxation was exacted on an annual basis. Yunnan and Jiangxi were the two provinces whose silver outputs were the most abundant. *Yuan Shi* lists Weichu (Chuxiong), Dali, Jinchi (Baoshan), Lin'an, and Yuanjiang as the major sites in Yunnan.<sup>11</sup> During the first year of the Tianli reign (1328), the silver mining tax (*yinke*) in Yunnan was 36,784 taels, compared with 23,104 in Jiangxi, a traditional province famous for its rich silver resources.<sup>12</sup> Silver taxation in the Yuan Dynasty was about 30 percent, so the yearly output of silver in Yunnan amounted to 122,614 taels, which accounted for nearly half of the national output.<sup>13</sup> 7

The value of silver in Yunnan during the Yuan period can be seen from Marco Polo's records at the end of the 1280s when he was sent by Khubilai Khan through Yunnan to Burma. He mentioned that in the Kunming area eight taels of silver equaled one tael of gold.<sup>14</sup> In the Gold Teeth area where gold was relatively abundant, five taels of silver were exchanged for one tael of gold. This favorable rate lured merchants who sought to make great profits from their silver.<sup>15</sup> 8

Table 6.1 Silver Taxation in Yunnan during the Ming Period 9

The continual development and the significance of silver mining in Yunnan during the Ming Dynasty can be reflected by mining taxation. Song Yingxing of the sixteenth century pointed out that silver output in Yunnan constituted over half of the national output, more than what was mined from all other provinces combined.<sup>16</sup> Other documents affirm his conclusion. In 1458, the quota for the silver mining tax (*yinke*) in Yunnan was set as 52,380 taels, followed by Zhejiang Province (21,250 taels) and Fujian Province (15,120 taels).<sup>17</sup> Two years later, silver mining tax in Yunnan reached over 100,000 taels, that is, it was almost doubled.<sup>18</sup> Table 6.1 provides a general account of the silver tax in Yunnan in terms of its national significance.

These figures, though incomprehensive, illustrate the significant contribution of silver of Yunnan to the Ming economy, because the annual average silver mining tax of the empire throughout the Ming period was around 100,000 taels.<sup>19</sup> This table shows that in the worst years, Yunnan's silver tax accounted for half of the national figure. Quan Hansheng estimates that total silver mining tax from 1390 to 1520 was 11,395, 775 taels.<sup>20</sup> If Yunnan dominated half of the national production (which is a very conservative estimate), that is, 5.7 million taels, and if the silver mining tax in the Ming was around 30 percent, as Quan concludes, then Yunnan in the Ming period would have produced 19,000,000 taels of silver. This figure, nonetheless, was far below what James Lee estimated. Lee concluded that by the end of the Ming period, Yunnan produced 2.5 million kilograms of silver, which was three-quarters of China's total output, as much as what the Portuguese trade brought to Ming China.<sup>21</sup>

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These figures on Yunnan's silver output were incomplete, as silver was also mined in native chieftain areas. For example, in the Lijiang area, the Mus controlled the mining industry. In 1603, Yang Rong, the eunuch who oversaw the mining industry in Yunnan, planned to take over silver mines in Lijiang, but failed because of concerns that it might cause chaos in this frontier-ethnic area.<sup>22</sup> However, under state pressure, the Mus "voluntarily" offered silver to the court. Mu Zeng, the native chieftain, offered a tribute of more than 20,000 taels of silver to the Ming military campaign in 1610, and 10,000 taels in 1619 to the Manchu campaign.<sup>23</sup> Considering the vast areas controlled by native chieftains, the case of Mu Zeng by no means was an exception.

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Silver spread from frontiers to non-Chinese areas. International trade could continue and prosper because the Yuan and Ming empires gave some autonomy to their native subjects and the Chinese authority itself only enjoyed formal (sometimes even less) control over the frontiers. The insatiable demand for jade and precious stones by the Ming court, for example, could be met across the border by the Upper Burmese mining industry. Likewise, silver produced in Yunnan and Burma not only flowed to China proper but also was shipped to Southeast Asia, South Asia, and beyond. Indeed Marco Polo mentioned that silver was exchanged for imported gold in western Yunnan frontier areas, where the former metal was relatively more valuable.

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John Deyell's study of medieval Bengal (1200–1500), which overlaps with the Yuan-Ming time, points out that Bengal states gradually achieved silver monetization.<sup>24</sup> "Due to the total absence of indigenous sources of silver in Bengal," he concludes, minting, export, industrial uses, savings, and attribution losses of silver in circulation from 1200 to 1500, "were directly all dependent on the rate of importation of silver."<sup>25</sup> Hence, the crucial question is the original source of the Bengal silver. Deyell examines the sites of gold and silver mines in East and Southeast Asia and concludes that, at that time, silver came from Yunnan and the northern Shan states, since silver sources in Siberia, Manchuria, Japan, and Hunan in the mid-Yangzi region were too far away for medieval Bengal to access. **13**

Ming China's silver monetization resulted in an insatiable desire for silver, but gradually, silver mining tax became an enormous burden on local people, and could not be collected on an annual basis.<sup>26</sup> Consequently, silver resources in Yunnan were exhausted under the existing technology, as reflected in numerous official reports and memorials. **14**

Scholars have paid a lot attention to "the transition from the coin economy of the early imperial era to the silver economy of the later imperial period," which they add, "marked a crucial watershed in the evolution of Chinese society, economy, and culture."<sup>27</sup> Scholarship on seventeenth-century China likewise is bifurcated into the "early modern" approach, emphasizing the economic stimulus of silver imports, and the "crisis thesis," which underscores the dire consequences of China's dependency on the world economy.<sup>28</sup> While the massive inflow of silver engendered a great transformation in China's economy, the shift from bronze coin to a silver standard was already underway long before the influx of foreign silver in the late Ming.<sup>29</sup> Hence arises the question: What was the role of Yunnan silver in this shift? **15**

Yunnan silver in the Yuan and early Ming comprised a majority of the national production, and can be compared with the New World silver imports in terms of scale, as James Lee has stated. Certainly, we can conclude that Yunnan silver contributed to this shift, although the extent to which it did needs to be explored. As such, scholars may wish to reconsider the impact of silver imports from the New World, or at least, to reconsider the role of Yunnan silver in China's monetary transition and economic development from the Yuan period onward. Furthermore, the case of Yunnan silver sheds light on the interactions and impact of the Chinese incorporation process. Local resources were utilized to serve national interests. It is fair to conclude that China's prosperity depended at least partially on exhausting the local resources of frontier and peripheral areas. **16**

## The Cowry Money System in Yunnan: A Global Analysis

### Understanding Cowry Money: Its Origins, Uses, and Paths of Circulation

While Yunnan produced a large amount of silver to support the Ming economy, which was going through a process of monetization, Yunnan itself used cowries as the primary medium of economic activities. 17

Chapter two introduced cross-regional trade along the SSR, which circulated diverse goods, but stopped at discussing the medium of trade. What sorts of things functioned as money? Scholars seem disappointed to "find that the records (mostly epigraphic) of these countries do not furnish much information on different economic professions, nor is there any reference to a Khmer or any other coinage, though one can hardly doubt the circulation of coinage on the progressive economic life in those countries."<sup>30</sup> In fact, bartering had been the major form of trade until the very recent period of European colonialism.<sup>31</sup> 18

There were not so many currencies in this trade network. Certainly, gold, silver, cloth, and salt sometimes functioned as money, but they had the dual roles of commodity and money. Many reasons account for the barter trade along the SSR. For example, there was no single empire strong enough to control the road and to implement its currency policy. Indigenous long-distance trade as transit trade was controlled by local elites and completed by many merchants. Although Marxist scholars of China blamed the lack of common currency for the low rate of commercial economy, the lack of standardization was also a sign of the interdependence and dynamics of local economies. 19

In fact, cowry money commonly circulated along the SSR. Originating in the Maldives, cowries had for a long time been exported to India and Bengal and from there migrated through Eurasia. Cowry money was used in India and parts of Southeast Asia including Arakan, Martaban, Pegu, Siam, Laos, Burma, and Yunnan,<sup>32</sup> where, thanks to its relative smaller size, hardness, and portability, cowries became currency in transactions of small value and penetrated into daily life.<sup>33</sup> James Heimann concludes that in India cowries were the counterparts for the metal currencies that dominated trans-market economies.<sup>34</sup> 20

Chinese travelers, such as those in Zheng He's treasure fleets, noticed the use of cowry money in Southeast Asia when cowry money had long since disappeared in all of China except Yunnan.<sup>35</sup> Tombs and relics dated to the legendary Xia (twenty-first century BCE to sixteenth century BCE), Shang (sixteenth century BCE to eleventh century BCE), and Zhou (eleventh century BCE to third century BCE) periods have housed numerous cowry shells. Cowries were not indigenous to the Yellow River, but were imported from coastal areas or might have come through Central Asia. Since the Spring-Autumn period (775 BCE-476 BCE), cowries gradually began to disappear from Chinese markets. When Qin Shihuang unified China in 221 BCE, he 21

standardized diverse measures of payment, moneys, and Chinese characters extant in previous states. As a result, cowries were replaced by iron and copper coins. Since then, cowries have been used only as ornaments.

The use of cowries in Yunnan was different from that of China proper in terms of its long-term existence. From 1955 to 1972, archeologists have unearthed a large number of cowries in tombs in Yunnan, amounting to more than 260,000 pieces and over 700 kilograms.<sup>36</sup> All these tombs are dated up to time before the Qin unified China and demonstrate that cowries were present in Yunnan before the late third century BCE. Were these cowries moved into Yunnan as a sort of money or a sort of valuable item held in high esteem? Scholars hold different opinions.<sup>37</sup> Michèle Pirazzoli-t'Serstevens "has demonstrated that the most frequent cowry species found in Tien tombs are *Cypraea annulus* Lin. This seems to have been a special highly prized form of money, a status marker, and a certain form of prestige goods, accumulated as stores of value and used in intersocietal exchanges between elites, exclusively."<sup>38</sup> Hence, these cowries serve as strong evidence for the SSR, or trade of luxuries between Yunnan and the Indian Ocean zone. Hans Ulrich Vogel's study has illustrated that the basic denominational system of Yunnan cowry money remained unchanged from the ninth to seventeenth century. Moreover, comparing Yunnan with Bengal and Siam, he has uncovered a close relationship between denominational and reckoning systems, which served as another basis of the cowry system in the Indian Ocean trade network.<sup>39</sup>

It is worth reiterating that the cowries unearthed in Sanxingdui dated 3,000 years ago and belonged to the same period of cowries found in the Shang tombs of the Central Plain. Those found in the Sanxingdui matched those in Yunnan, which together with the geographical relationship strongly suggest that the source of cowries in Sichuan was the Indian Ocean and that they had come into China through Yunnan.<sup>40</sup> The reasons for the scarcity of cowries unearthed from after the Western Han period in Yunnan continue to elude us, especially given the paucity of textual sources. It seems that the cowry trade was suddenly disrupted. The only reasonable explanation seems to be the Han's military control over Yunnan. When the Ailao people submitted themselves in 69, Han China controlled most of present-day Yunnan, with Yongchang as a frontier station. The Han's presence in Yunnan certainly affected the local economy. Though it is difficult to estimate the degree, the disappearance of cowries and the presence of Han's *wuzhuqian*, a popular coin, in archaeological sites served as solid evidence. The case of cowry shows that political changes had a great influence on economic orientation in Yunnan during the Han time.

It was when China lost authority over Yunnan that cowries reappeared in Yunnan in large numbers and that the cowry money system took shape. However, the exact date of this occurrence remains unknown, since the first Chinese text recording cowry money in Yunnan is *Xin Tang Shu*. Fan Chuo's *Man Shu*, written around 864 and presumably a primary source mentions cowries, but only as ornaments. Hence, Pelliot concludes that it is difficult to know its local use before the tenth century.<sup>41</sup> However, Fang Guoyu, intimately familiar with Yunnan

sources, pointed out that Fan Chuo used many records from previous works, sometimes two centuries earlier than Fan's era.<sup>42</sup> Based on Fang Guoyu's research, Vogel cautiously concludes that cowries as money were used in Yunnan in the early ninth century, which is implied by the popular acceptance of Buddhism in Nanzhao while leaving space for an earlier possibility. The Song sources are again silent, which Vogel credits to the political independence of the Dali Kingdom.<sup>43</sup>

### Regulating Cowry Money

In the Yuan Dynasty, cowries were popular in Yunnan. Yuan sources present a vivid picture of cowry money in economic life. Li Jing records that cowries were a medium of trade when he served in Yunnan in the early fourteenth century.<sup>44</sup> One cowry was called 1 *zhuang*, 4 *zhuang* making 1 *shou*, 4 *shou* making 1 *miao*, and 5 *miao* making 1 *suo*; so 1 *suo* was equal to 80 pieces of cowry. Indigenous peoples used and stored cowries as wealth. One Hani man told his son before his death that he had some cowries stored, some of which the son was allowed to use and the rest his father would use in his afterlife.<sup>45</sup> 25

Elsewhere, the Yuan introduced a major economic reform in the shape of paper money (*chao*), but cowry money was deeply entrenched in the local society and could not be abolished or replaced within a short period of time. Throughout the Yuan period, the inflation of *chao* had been a severe challenge to the court, but the challenge in Yunnan was worse than in other provinces, because, as the Yuan officials eventually realized, the *chao* was not readily accepted in a local society where cowry money had dominated. In response, Sayyid'Ajall Shams Al-Din proposed to the emperor that cowry money be maintained, and the idea was approved.<sup>46</sup> As a result, tax was levied on the cowry, based on its officially fixed exchange rate with gold, whereas in all other provinces, it was levied on the *chao*.<sup>47</sup> 26

Because the government made cowries an acceptable form of tax payment, a large number of cowries for all kinds of taxation flowed into state treasuries. In 1328, the corvée (*kefa*) was made into cowries of 1,133,119 *suo*, and the wine tax was 201,117 *suo*.<sup>48</sup> In 1297, the provincial treasury stored cowries amounting to 2.7 million *suo*; four years later, it was almost fourfold, amounting to 10.07 million *suo*.<sup>49</sup> This huge figure relates only what was kept in the provincial treasury; the scale of cowries in the markets and private households might have ever been larger. Therefore, cowries circulating in Yunnan must have amounted to more than 1 billion pieces. 27

Cowries were stored in the custom office (*shibosi*) in Jiangnan. Some merchants managed to ship cowries from Jiangnan to Yunnan for horses and gold, which resulted in inflation in Yunnan. In order to solve the problem, the emperor approved a memorial to forbid this transaction.<sup>50</sup> The different taxation regulations in Yunnan attracted so many merchants to 28

transport cowries to Yunnan that the Yuan government decided to establish posts in order to stop them.<sup>51</sup> Hence there arose an intriguing phenomenon, that is, the so-called *zhenba* (true cowry) that was recognized by the government.

In 1305, the Yuan state issued a regulation stating, "cowries if not of the native land, were regarded as forged *chao*" (*qibei fei bentu zhe, tong weichao*).<sup>52</sup> Since Yunnan did not produce cowries, the so-called cowries of the native land referred to what was already circulating in the Yunnan markets; thus cowries were no longer allowed to flow into Yunnan and if found, they were to be confiscated under the pretext that they were *siba* (private cowries). By illegalizing the inflow of cowries, the Yuan state tried to regulate and control the cowry money system, eventually aiming to abolish it. Such a policy suggests the conflict within the empire as the central state on the one hand, was forced to acknowledge local power, and on the other hand, desired to regulate and penetrate it. 29

Cowries had various uses during the Ming Dynasty. First of all, cowries were still used to pay tax. In 1384, when Yunnan was just conquered, Zhu Yuanzhang approved a memorial stating that local products such as gold, silver, and cowries were to be used to pay taxes. While the Yuan taxation was wholly paid by cowries, a 1481 regulation by the Ming court allowed 70 percent of its taxes to be paid by cowry and the rest by *chao*,<sup>53</sup> although this rate may have varied across time and region. Second, the Ming state used cowries to pay salaries and provisions to officials and soldiers or as grants to nobility. For example, Zhu Yuanzhang presented his son with cowries when this prince was assigned to Yunnan.<sup>54</sup> In 1403, Emperor Yongle gave 100,000 *suo* of cowries to Prince Ru'nan, who was stationed in Dali.<sup>55</sup> Third, cowries were not only used in small transactions in daily life but also in large deals such as house and land purchases. In one case, in 1548, 2,160 *suo* of cowries were used to buy a house valued at 24 taels of silver.<sup>56</sup> Laymen donated cowries to monasteries.<sup>57</sup> Cowries were loaned, too. Sometimes the loaner borrowed silver, but paid cowries as interest; other times, he borrowed and repaid in cowries.<sup>58</sup> 30

Table 6.2 Exchange Rate between Cowries and Silver
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Similar to the practice of the Yuan period, cowries were stored in other Ming treasuries. In 1437, the Ming court decided to move cowries from the Nanjing treasury to Yunnan to pay salary to officials.<sup>59</sup> Three years later, the emperor ordered a shipment of 550,000 *jin* of cowries to Yunnan, again for salaries.<sup>60</sup> It should be pointed out that not all people liked to pay cowries to the state. In 1411, Sien, the native chieftain of Xichidian, asked to use silver to pay taxes of 79,800 *suo* of cowries that had to be purchased from Lin'an.<sup>61</sup> Since cowries circulated in large numbers, a kind of cowry bank (*bahang*) emerged. In 1600, Zhang Weixian in Chuxiong County signed a certificate before the magistrate to run a cowry bank in the county city.<sup>62</sup> Because of its diverse usage, cowries in Yunnan symbolized wealth. The rich were nicknamed *you ba* (having / holding cowries).<sup>63</sup> In short, cowry money fulfilled the functions of modern abstract

money.<sup>64</sup> While cowry money penetrated daily life, its values gradually decreased. Table 6.2 provides a view of the decreasing value of cowries from the Yuan period to the end of the Ming Dynasty.

### Demise of Cowry Money

While both the Yuan and the Ming courts accepted cowry as official currency, they had attempted to control, reduce, and eventually replace cowries with their own money system. The Yuan state differentiated between the true cowries (*zhenba*) and the forged cowries (*siba*) in an attempt to limit the circulation and use of the cowry. The Ming state launched further steps to replace cowries. In 1555, the Ming state began to mint copper coins in Yunnan. A memorial stated that Yunnan copper was moved and minted in Huguang, and that the Ministry of Taxation finally decided to open minting furnaces in Yunnan with 20,000 taels of silver from salt tax invested.<sup>65</sup> The result was not encouraging at all. Three years later, a memorial recorded that 33,000 taels of silver as investment only minted 28,740,700 pieces of copper coin, far below the state quota of 33,012,100 pieces. Since the cost outnumbered the surface value of cash, it was suggested that the minting project be abolished. The emperor pointed out that since Yunnan produced copper, state expenditures should not be risked for the sake of Yunnan's small costs (*buyi xi xiaofei yi kui guoyong*); therefore he ordered the continuation of minting.<sup>66</sup> 32

However, the discussion and debate on the Yunnan minting project continued. As a result, in 1565, the Ming court decided to stop the minting in Yunnan because it was not profitable, and because cowries dominated markets and copper coins were not accepted by commoners.<sup>67</sup> In 1576, an official in Yunnan again advocated that the minting be resumed: "As Yunnan produces copper, and does not mint, rather [we] buy cowries with high price; which way is profitable and which way is harmful?"<sup>68</sup> As a result, the minting was resumed, but the problems remained to be solved. Copper coins were refused in Yunnan markets and had to be transported to Guizhou and used to pay soldiers there.<sup>69</sup> Four years later, the minting was forced to stop once again.<sup>70</sup> 33

Although the copper minting project had faced several failures in Yunnan, some Confucian scholars did not give up, since the standardization of the monetary system was a symbol of imperial virtue. In 1625, Yunnan resumed its minting operation. And this time, it seemed that local people were gradually starting to accept copper cash.<sup>71</sup> In his memorial Min Hongxue, governor (*xunfu*) of Yunnan, recalled the success of copper minting and circulation in Yunnan in 1626.<sup>72</sup> By the summer of 1626, over 700,000 pieces of copper cash had been minted and it was decided that circulation would commence on the tenth day of the seventh month. Much gossip and suspicion spread among the people. Min then drafted a regulation to explain and appease the local people. Plain rhymes were made for the illiterate in order to cultivate more support for the introduction of copper cash. At the beginning of the month, throughout the province, officials, students, and community leaders were mobilized to explain and justify this project. In their statement, they tried to legitimize the use of copper cash by pointing out that 34

copper coins symbolized the Ming rule and that even remote places such as Yunnan could not exist apart from that civilization. As a result, copper cash began to circulate in Yunnan in 1626, competing with cowries. An edict issued to Yunnan in 1627 confirmed the above memorial, informing residents that copper coins had taken root in Yunnan (*qianfa yike tongxing*), and the minting apparatus was ordered to be sent from Beijing to Yunnan.<sup>73</sup> At the same time, 700,000 copper coins were a small drop in the bucket. Cowry money would not retreat from markets so easily.

The mining project had continued since 1626, and was followed by efforts of the Daxi regime in Yunnan during the Ming-Qing transition. The Daxi regime was established by Zhang Xianzhong, a leader of a peasant rebellion at the end of the Ming Dynasty. After Zhang's death, Sun Kewang, a general of Zhang's, occupied Yunnan. Sun ordered the production of copper cash for his regime, a legitimate symbol of new power. And the use of cowries was forbidden. The users of cowries would be punished by having their noses cut off.<sup>74</sup> When Wu Sangui ruled Yunnan, the minting continued until 1670, when its circulation dropped. In 1673, when Wu rebelled, he again began to mint his own copper cash. When the rebellion was pacified in 1681, the Manchus began to mint.

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Two questions most intrigue scholars about the use of cowries as money in Yunnan: why the use of the cowry lasted so long in Yunnan, over a thousand years longer than in the Central Plain; and why the system suddenly collapsed in the mid-seventeenth century. Ample studies have been conducted, and in general, two opposing schools of thought have emerged. The first school looks inward, emphasizing the penetration and control by the central states and asserting that they simply forbade and abolished the cowry currency, which in turn helped consolidate the central presence on the periphery. The second school extends its gaze outward to the globalizing, modern capitalist world.

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As early as 1948, Jiang Yingliang, one of the pioneers in Yunnan studies, pointed out that, since Yunnan had come under the direct rule of China in the Yuan-Ming era, the relationship between Yunnan and Chinese imperial states became stronger than that of Yunnan and Siam. Consequently, silver and copper coin, the Chinese official currency, took the place of cowries as a "naturally economic choice."<sup>75</sup> Jiang also stated that the lack of copper coins in Yunnan was another reason for the long-standing use of cowry money, and that copper coins produced in large numbers at the end of the Ming and early Qing facilitated the process of replacement.

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As a member of the "state penetration" school, Yang Shouchuan instead focuses on the growing markets, which he regards as the result of Chinese immigration encouraged by the state. The low value of cowries could not meet the demand of the growing markets when many relatively valuable items were introduced. Silver and copper became the main media of trade. The emergence of the private mining industry, another impact of state policy, was also listed as a factor. Since the mid-Ming period, the state relaxed its mining monopoly in Yunnan, which to a great extent contributed to the rise of private copper mining and the growth of copper

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output.<sup>76</sup> In addition, Yang stresses the policy of the Daxi regime, and has noticed that the disappearance of cowries coincided with the Daxi regime's rule in Yunnan. At that time eighteen large minting furnaces were set up and all transactions of taxes, levies, and trades were completed by silver and copper.<sup>77</sup>

The same school argues that cowry currency was popular before the mid-seventeenth century because of low social productivity, and that it disappeared in the mid-seventeenth century because of the prosperity of a commodity economy.<sup>78</sup> Essentially, this group of scholars believes that the replacement of cowries with copper cash was the result of "natural economic law," which was represented by state policies. The retreat of cowry currency, on the one hand, was the result of the central penetration, and on the other hand, it helped and symbolized the central penetration. 39

The second school's global perspective leads them to a dramatically different conclusion. Fang Guoyu points out that cowries used in Yunnan were shipped from the coastal areas. Therefore, even when Chinese states forbade the use of cowry money as the medium of trade, cowries continued to enter Yunnan. So, contrary to what the first school believes, Fang implies, state policies violated natural economic laws.<sup>79</sup> Rather than focusing on state policies, Fang Guoyu examines the source of cowries, namely, the coastal areas in Southeast Asia. Fang points out that the long-term existence of cowries in Yunnan was because of Yunnan's close commercial relationship with those areas where what happened consequently explained the change of Yunnan cowry system. The advent of European capitalist expansion into South Asia and Southeast Asia, Fang Guoyu argues, broke the previous trade network, which left a negative influence on the commercial relationship between Yunnan and the coastal areas. As a result, the previous trade network was diminished and declined. Thus cowry currency, the symbol of trade, could not be maintained. Therefore, Fang Guoyu concludes that the collapse of the trade system around South Asia and Southeast Asia, which resulted from European colonialism, functioned as the decisive factor.<sup>80</sup> 40

Like Fang Guoyu, Zhang Bincun places the cowry system in a global context and emphasizes that the system collapsed in Yunnan in a relatively short period, from the 1660s to the 1680s. Zhang believes that pointing a finger squarely at state policies and the growing internal markets of Yunnan is insufficient to account for the quick disappearance of cowry currency. Following Fang Guoyu, Zhang examines the expansion of European capitalism in Southeast and South Asia, but unlike Fang who argues that European capitalism destroyed the existing trade system so that Yunnan's maritime connection was cut, Zhang argues that European capitalism neither broke the local trade network nor intentionally blocked the supply of cowries. Instead, he concludes that the collapse of the cowry money system in Yunnan was an unexpected consequence of European commercial capitalism. 41

Unlike Fang Guoyu, Zhang points out that trade had intensified with the arrival of the Europeans until boundaries were demarcated after 1949. However, the dramatic increase of the slave trade led to a growing demand for cowries. As a result, the price of cowries so increased that Yunnan could not afford them. Hence, cowries in the Maldives became inaccessible to Yunnan.<sup>81</sup> 42

It seems that both internal and global changes contributed to the collapse of cowry currency in Yunnan during the mid-seventeenth century. Vogel points out that while the value of cowries increased in Bengal, cowries in Yunnan were devalued. As a result, it was no longer profitable to ship cowries into Yunnan.<sup>82</sup> In addition, I suspect that the huge gap in price may have resulted in the outflow of cowries from Yunnan back to the Indian Ocean. Since Vogel did not pursue the reason for the devaluation of cowries, it is fair to ask what else could have caused the devaluation—except Ming China's control over Yunnan. Throughout the Ming Dynasty, about one million Han migrants moved into Yunnan, which dramatically changed Yunnan's demography. By the end of the Ming Dynasty, Han Chinese constituted the majority ethnic group in Yunnan, with a population of about three million in the reign of Tianqi (1621–1627).<sup>83</sup> The introduction of the Chinese agrarian economy and social traditions obviously clashed with the local economic system, including the monetary system. On three separate occasions, the Ming state had attempted to establish mints in Yunnan, aiming to replace cowries with copper cash. Though not as successful as expected, these attempts still helped disrupt the cowry money system and its credibility, as the 1626 project saw the circulation of copper cash in Yunnan. Hence, the devaluation of the cowry was a logical result. Generally speaking, the cowry's long-term existence, therefore, was the result of the SSR that connected Yunnan closely with the Indian Ocean trade structure.<sup>84</sup> Moreover, its dramatic disappearance from Yunnan was, to a large extent, the result of an expanding European modern world-system into the Indian Ocean. 43

### **The World-System Reading of the Collapse of the Cowry Money**

The collapse of the cowry monetary system in Yunnan throws light on the ongoing world-system debate. Janet Abu-Lughod has framed the debate with the following three questions: 44

1. Has there been only *one* world-system, the one that began with the sixteenth century?
2. Have there been several successive world-systems, each with a changing structure and its own set of hegemonies?
3. Or has there been only a single world-system that has continued to evolve over the past 5,000 years?<sup>85</sup>

World historians have taken different positions in the debate. One of the leading scholars of this discussion, Immanuel Wallerstein endorses the idea that there is only one world-system that began with sixteenth century Europe and globalized itself till present day (and thus called 45

modern, capitalist, or European world-system); Abu-Lughod believes in several successive world-systems; and Andre Frank and Barry Gills argue for a 5,000-year-old world-system. I regard China as a precapitalist world-system or world-economy (to use Wallerstein's terms) that incorporated Yunnan.<sup>86</sup> But was Yunnan a frontier area, an independent world-system, a section of another world-system, or an external area over which the two world-economies were contending? The cowry system in Yunnan and other evidence of Yunnan's connection with Southeast Asia and South Asia may suggest that Yunnan belonged to the Indian Ocean economy, at least before the Ming period.

In the mid-thirteenth century the Mongol military campaign successfully brought Yunnan into China. But cowry currency lasted another four centuries after the Mongol conquest. This suggests that although Yunnan was politically subject to China, economically it was still more closely associated with the Indian Ocean region. The cowry system, representing the trade network along the SSR, has indeed raised intriguing questions for contemporary discussions of world-system hypotheses. Wallerstein contends that the modern world-system emerged 500 years ago.<sup>87</sup> Janet L. Abu-Lughod, in search of the roots of the European world-system, has found another world-system that existed between 1250 and 1350.<sup>88</sup> Frank and Gills's belief in the existence of a 5,000-year-old world-system has been met with the controversy over whether a world-system existed before 1250.<sup>89</sup>

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Abu-Lughod's choice of the year 1250 as the beginning year of her world-system is interesting, since three years later the Mongols conquered Yunnan and began to penetrate mainland Southeast Asia. The Mongols' military conquests in Burma and Vietnam, although not as successful as in Yunnan, to some extent facilitated local communications and cross-regional interactions. In this sense, the case of Yunnan seems to affirm the 1250–1350 world-system.

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Nonetheless, readers may have already noticed the intimacy between Yunnan, Southeast Asia, and South India before the arrival of the Mongols. The large scale of silver migrations to Bengal, according to John Deyell, should have occurred at least half a century before 1250. Horses and other goods again, seem to have moved from Yunnan to Southeast Asia and Bengal at a much earlier time.<sup>90</sup> Moreover, the early medieval ages witnessed the rise of local powers around Southeast Asia and South India, a result of interactions between overseas and overland trades.<sup>91</sup> James Heimann has illustrated that "an ordered system of ratios" between cowries and specific metal currencies lasted from the post-Gupta period until the nineteenth century,<sup>92</sup> and demonstrated how "trade in the Indian Ocean integrated local production/consumption patterns and currency development, resulting in a specific Indian Ocean 'world-economy.'"<sup>93</sup> Hence, local geo-political units in the Indian Ocean zone, just like those in the Mediterranean, could only be understood "in terms of their interdependency within that wider network."<sup>94</sup> While Heimann's argument centered on the Maldives-Bengal cowry trade, Yunnan definitely belonged to his Indian Ocean world-economy, since the similar denominations and systems of calculation extended from Bengal to Siam and Yunnan.<sup>95</sup> If so, then does the case of Yunnan support Wallerstein's concept of several world-economies before 1250 or Frank's

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one world-system? Or could the 1250–1350 world-system be pushed back earlier, since the Yunnan trade is ignored in Abu-Lughod's research? Although I cannot claim a precise conclusion, I will instead attempt to emphasize that the study of Yunnan—a seemingly peripheral area but actually a bridge connecting several civilizations—would help understand civilizational interactions. It is these interactions that eventually formulated "the ecumenical world system."<sup>96</sup>

Furthermore, Heimann has shown how the expansion of the European world-system into the Indian Ocean adopted and finally bankrupted the existing cowry system. The incorporation of the cowry system into the slave trade had contrasting influences on the Maldives-Bengal, the center of the cowry system, and on Yunnan, a very marginal area of the Indian Ocean world-economy. While the Maldives-Bengal trade further developed due to the increasing demand for cowries, Yunnan, a recipient of cowries, was the first victim of the consequences of this demand, because Yunnan was no longer able to afford the booming price of the cowry. That is why within only two or three decades cowries in Yunnan disappeared from local markets. In short, the collapse of the cowry system in Yunnan revealed that the globalizing modern world-system, while incorporating the Indian Ocean precapitalist world-system, pushed Yunnan, part of the Indian Ocean precapitalist world-system, or a peripheral region overlapped by two world-economies, to be incorporated into the Chinese world-system. Therefore, the Chinese incorporation of Yunnan should first and foremost be credited to the Mongol conquest, a result of long-term conflicts between China and Central Asian powers, and to some extent to the globalizing European world-system. While the first event was military and political, and the second was economic, neither of them was Chinese.

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My emphasis on transregional forces underscores the significance of Chinese immigration to the incorporation. The first immigrant wave, sponsored by the Ming state, dramatically changed the demography and thus set the basic demographic pattern for modern Yunnan. The following section will introduce Chinese immigration in the Qing Dynasty and how it consolidated and furthered the demographic trend created during the Ming period.

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## Chinese Immigration and Population in the Qing Period

### Comparing the Ming and Qing Periods

By the sixteenth century, the Ming military immigrants and their descendants constituted one quarter of the registered population in Yunnan, one half of the registered population in Guizhou, and almost the entire registered population in southern Sichuan.<sup>97</sup> However, the registered population of the Southwest during the Ming was at most half the actual population, and most of the unregistered people were indigenous.<sup>98</sup> Therefore, Han military migrants and their descendants probably accounted for one-eighth of the actual population in Yunnan. This deduction was problematic, too, since many Han immigrants, for instance, those in the Mu

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farms, were not registered.<sup>99</sup> The number of Qing immigrants to the Southwest was even larger, and it increased the Han proportion from about 33 percent of the Southwest population to the 60 percent that has remained in present time.<sup>100</sup>

Late imperial China experienced a population boom. Although the Ming-Qing transition experienced a lot of wars and natural disasters, the early eighteenth century underwent a rapid increase in population as soon as the war ended. Population pressure pushed land-hungry immigrants to seek available fields. Sichuan, whose population had been decimated by the war, was the first to be affected by a well-known movement called *Huguang tian Sichuan* (Huguang migrants fill Sichuan). In Yunnan its population did not fluctuate as much as Sichuan's did by warfare; nonetheless, as soon as Sichuan was inhabited, immigrants marched into Yunnan. 52

Map 6.1 Yunnan in the Qing Empire

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Like the Ming Empire, the Qing state sponsored these immigrants through tax exemption, travel funds, and grants of seeds and tools. The flow of immigrants, according to James Lee, increased the population growth rate by 10 per 1,000 by 1785, 20 per 1,000 by 1795, and over 25 per 1,000 by the early nineteenth century.<sup>101</sup> He estimates that the population growth rate of immigrants were two times that of the natives.<sup>102</sup> By 1850 the number of immigrants reached over three million; this amounted to another important milestone in the demographical structure of the Southwest, that is, the Han population outnumbered non-Han peoples.<sup>103</sup>

The Qing Dynasty immigrants can be distinguished from those of the Ming Dynasty by two features. First of all, immigrants who arrived in the later period managed to access the hilly and mountainous areas where the Ming had few influences and where Han communities (if they were present) had been absorbed into the native society. When the Manchu regime put down the Wu Sangui Rebellion, it imposed its military system on Yunnan. Large military units such as *zhen*, *xie*, and *ying* were put in urban cities while many small military posts such as *xun*, *tang*, *guan*, *shao*, and *ka* (referred together as *xun-tang*), were set up in the remote mountainous areas. These *xun-tang* garrisons were assigned with a number of soldiers varying from several to several dozens, sometimes up to a hundred. *Yunnan Tongzhi* (Daoguang edition) recorded that there were over 3,500 *xun*, *tang*, *guan*, *shao*, and *ka* throughout Yunnan.<sup>104</sup> These military units, like the Ming military colonies, became villages of Han households, which began to penetrate ethnic mountain areas, particularly in southern and southwestern Yunnan. 54

*Gaitu guiliu* as imposed by the Qing state extended its authority into southern and southwestern Yunnan, where Ming power had not yet reached. Large areas of native territories were overseen by imperial administrative and military hierarchies. In southeastern Yunnan, Guangnan Prefecture was reformed in 1661, and Kaihua Prefecture was established in 1667. Guangnan had twelve *xun*, seventy *tang*, and thirty-four *ka* (each with several to twenty soldiers);<sup>105</sup> Kaihua held twenty-one *xun*, seventy-six *tang*, and sixty-two *ka*.<sup>106</sup> In southwestern Yunnan during the Yongzheng reign (1722–1735), the reformed Puer Prefecture consisted of 55

one county and three subprefectures (*ting*), with sixteen *xun*, eighty-three *tang*, and fifteen *shao* set up. In the beginning, there was one *xie* in Yuanjiang with one thousand soldiers, but the force was too small to control the area; later, one *ying* was created in Puwei with 1,400 soldiers, but this was still not enough for this vast area consisting of Puer, Zhenyuan, Weiyuan, and Enle, where *gaitu guiliu* had recently been launched. Hence, O'tai suggested that one *zhen* be added, keeping watch on Yuanjiang, Zhenyuan, Puer, Weiyuan, Cheli, and Chashan, with three *ying*, and in total, 3,200 soldiers.<sup>107</sup> Northwestern Yunnan was another major area where the *xun-tang* system recently had been instituted. In Lijiang Prefecture, which was reformed in 1723, there were 18 *xun*, 71 *tang*, and 25 *shao*; in Zhongdian and Weixi there were eight *xun* and 66 *tang*.<sup>108</sup>

The military presence facilitated the migration of land-hungry peasants from inland provinces in the eighteenth and nineteenth centuries. An 1836 memorial stated that in the mountainous areas poor people from Hunan, Hubei, Sichuan, and Guizhou built shacks, cut down trees, burned hills, and planted corn.<sup>109</sup> Kaihua, Guangnan, and Puer in southern Yunnan were the three prefectures that held most of these immigrants. *Guangnanfu Zhi* reported that these people of Chu (Hubei and Hunan), Yue (Guangdong), Shu (Sichuan), and Qian (Guizhou) brought their wives and children, and saw the zhang area as happy land (*shi zhangxiang ru letu*);<sup>110</sup> more important, it stated that recent households were mainly soldiers of *xun-tang* and immigrants from interior provinces far away.<sup>111</sup> Local governments were thus ordered to check and register these immigrants (*liumin*). Statistics from that time revealed that 24,000 immigrant households were in the Kaihua Prefecture, 22,000 in Guangnan, and more than 40,000 in Puer, Yuanjiang, and Lin'an.<sup>112</sup> In addition, ethnic peoples such as the Miao and Yao from Guizhou and Guangxi also moved in, mostly settling in hilly areas. The arrival of these immigrants drastically transformed the demographic landscape in southern and southwestern Yunnan frontier areas.

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Very few Chinese peasant immigrants had arrived in the southern areas before the Qing period. As late as the Yongzheng reign (1722–1735), *Yunnan Tongzhi* pointed out that in Yuanjiang, Puer, Kaihua, and Guangnan, residents were all "barbarian" households (*yihu*).<sup>113</sup> While this statement was exaggerated since some Han immigrants also lived there, the demographic structure certainly changed within a century. By 1824, there have lived immigrant households (*tunmin* and *keji*) as many as native households (*tuzhu*).<sup>114</sup> In 1836, immigrant households in Puer consisted of nearly 60 percent of registered households.<sup>115</sup> *Yunnan Tongzhi* (Daoguang edition), stated that since the reform and the opening of schools in Kaihua, social customs had been transformed and Han people had recently begun to reside here (*hanren yi shao jiju yan*).

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### **Qing Expansion Into Yunnan: Agricultural and Urban Development**

Immigrant dispersion into the hilly areas greatly transformed local landscapes, with the hills redesigned by terracing on their slopes, for instance, in the Hong River area (southern Yunnan) where terraces appeared quite early. But it was only during the Qing period that a large number

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of immigrants arrived and developed terraces into a staple local feature. Immigrants from Chu, Yue, Shu, and Qian brought their families and settled there. They reached 30 to 40 percent of the local population.<sup>117</sup> They rented or reclaimed fields, and their terraces were equipped with a refined irrigation system. Northwestern Yunnan saw terracing as well. The *xun-tang* system was set up along the Jinsha River valleys. Many immigrant villages were scattered along 300 *li* along the river. In areas where the altitude was high and the climate was cold, New World crops such as corns and potatoes that were suitable for cultivation in hilly areas helped immigrants, including the Han, Miao, and Yao people.<sup>118</sup>

By the early nineteenth century, immigrants had explored almost all available land in Yunnan. Two closely related elements accounted for the increase of arable lands: the reclamation of hilly areas and introduction of New World Crops.<sup>119</sup> James Lee estimates that more than half a million immigrants chose or were forced to live in hilly areas in the southwest.<sup>120</sup> The exploitation of hilly areas weakened the vertical ethnic segregation that had been partially created by the Ming migration.<sup>121</sup> The rich and the well-to-do lived on the fertile land in the *bazi*, while the poor moved up into the mountains, intertwining ethnic distribution with class conflict.

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The Qing migrations also facilitated urbanization. A large number of immigrants moved into cities and towns, where they served as laborers; laborers, especially miners, were much in demand. From 1700 to 1850, more than 300,000 miners worked in the Southwest,<sup>122</sup> particularly in Yunnan, for copper, silver, gold, and salt. The largest copper ores required the cooperation of tens of thousands of miners. By 1800, the number of miners there had reached over half a million.<sup>123</sup> While providing jobs for hundreds of thousands of migrants, the booming mining yielded sizable profits not only for the government but also for investors, merchants, and workers. Consequently, this industry lubricated commercialization and urbanization.

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In addition to miners, merchants were also rushing into Yunnan. Tea, minerals, such as salt, gems such as jade, furs, and other exotic goods attracted merchants from as far away as Jiangnan. Merchants from Jiangxi and Hunan were the most famous in the Qing period. Xie Shengguan and Wu Daxun, both officials serving in Yunnan during the mid-eighteenth century, presented ample descriptions of them:

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In Yunnan and Guizhou, whether it is a major transportation city or a remote village, there must be merchants from Jiangxi who either ran shops, or come and go to buy and sell goods.<sup>124</sup>

Today [the Qianlong reign] [people] in the cities were all Han people, [owners of] inns and eateries, middle-men, miners, and merchants and grocery households in "barbarian" villages, are all people from Jiangxi and Hu'nan, the two provinces. So that they manage to accumulate wealth, marry wives, and purchase property. Even in remote areas there is no village without merchants from the two provinces. As to the jade and precious stones that were produced in "barbarian"

territory, only these merchants risk crossing boundaries to purchase, putting their lives in danger to seek wealth and goods.<sup>125</sup>

### **Patterns of Growth: Population, Economy, Agriculture, and Industry**

Immigration during the Qing left remarkable legacies in Yunnan. First of all, it contributed to population growth in the Southwest from five million in 1700 to 20 million in 1850.<sup>126</sup> Yunnan alone attained a population of 10 million in 1850.<sup>127</sup> Second, immigration fostered urbanization and industrialization in Yunnan. To cite James Lee, 62

The Second Immigration was most important in shaping the regional economy that characterizes the Southwest today. Obviously it did not work alone. Many forces intermingled in transforming the Southwest from congeries of small, fairly autonomous enclaves into an integrated regional hierarchy of central places and their hinterland. But immigration converged with other circumstances in a peculiarly effective way. On the one hand, the immigrants vastly broadened the rural base by expanding the areas and by raising crop yields. On the other hand, they supplied the capital, labor, and organization that built the urban network.<sup>128</sup>

It was during this period that a provincial economic pattern emerged, as complex interactions among immigration, population growth, agricultural expansion, and industrialization took place. Agricultural expansion has been conventionally thought of as the major reason for population growth in late imperial China; nonetheless, in the case of Yun-Gui, James Lee argues that commercialization and industrialization were the two major causes, to which agricultural growth was a response.<sup>129</sup> He reveals that the population growth rate in Yunnan rose from 15 to 30 per 1,000 people in the late eighteenth century.<sup>130</sup> While population growth was universal, it generally grew more slowly in the peripheral areas than in the core area. When the rise of population in the core accelerated, the rate in the periphery slowed down, and vice versa, until the growth in the whole province stagnated in the early nineteenth century. While agricultural expansion explained the rise in the periphery, it could hardly account for what happened in the core area, in which the grain output per capita and per acre actually decreased. Natural fertility partially accounted for the demographic growth, but was unable to explain the imbalanced population growth. In fact, immigrants were the major contributor to the dramatic growth, constituting nearly 20 percent of the total Southwest population of 20 million by 1850. This grand wave of immigrants was not motivated by lands that had already been quite limited in Yunnan, but mainly by the labor shortage created by the mining industry. In this manner, a provincial economic pattern was created. 63

The Qing immigration not only shaped local economy and urbanization but also furthered the formation of local identity. At the end of the Ming period, as I have shown in the previous chapter, there emerged some elites who identified themselves as the Yunnanese. But the mass acceptance of this identity began to take place only during the Qing period. By connecting many isolated enclaves in mountains, Yunnan finally emerged as a whole frontier political-economic entity. Both the natives and migrants contributed to the transformation. For example, merchants of the Tai, Naxi, Bai, and Hui were important players in trade, well known 64

even in Southeast Asia. Native *jinshi* between 1750 and 1850 numbered more than 70.<sup>131</sup> Hence the natives played an active role both on many provincial and national stages.<sup>132</sup> In addition, many local non-Han customs such as those of the Tuzhu (local lord) cult had turned into regional southwestern customs, and were even regarded as part of the national culture, a continuity of indigenization. In a word, while a local identity emerged, it was not a parallel identity that would challenge Yunnan's Chineseness; rather, it was a branch and part of the Chinese identity, or a local representation of Chineseness.

Immigration during the Qing period diversified, unified, and integrated Yunnan simultaneously, thus continuing the trend created during the Yuan-Ming period, that is, regional integration into the Chinese Empire. During this process the Qing state played the integral role of sponsoring migration and establishing a military base. The "civilizing project" continued as Confucian education infrastructure expanded. Chen Hongmou, a Confucian idealist and governor-general of Yunnan, attempted by all means to make indigenous people Chinese, and focused on doing this through education. Chen's strong emphasis on indigenous education inherited and expressed a kind of Confucian consciousness and ethics.<sup>133</sup> Other state efforts included public works such as the granary system, relief system, water projects, and so on. The following section focuses on one distinctive issue in Yunnan, that is, the copper mining industry that served as a major artery in the Qing monetary system. In examining the development and decline of this industry, one can see more clearly the core-peripheral relationship of Qing China's world-economy.

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## The Copper Administration and the Qing Monetary System<sup>134</sup>

### Origins of Copper Mining in Yunnan

During the Qing period, a large number of immigrants to Yunnan were miners, especially in the copper mining industry, a distinctive feature of a frontier province in Chinese history. Imperial states usually maintained a cautious attitude toward the mining industry and miners, mainly because agriculture was regarded as the basis of the empire and the standard career for imperial subjects. Miners as a group were thought of as a potential threat to local order and the empire itself; it was therefore unusual to see a large percentage of miners especially in a frontier province. To understand why the Qing state made such a risky decision we need to take into account both the internal and international circumstances.

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Copper mining in Yunnan has a long history. Both the Yuan and the Ming dynasties taxed copper mining there. For example, in 1328, the copper mining tax in Yunnan was 2,380 *jin*.<sup>135</sup> This number revealed that the amount of copper output in the Yuan period was very limited. The Ming Dynasty began to mint copper cash in Yunnan as discussed above. Its scale of copper mining was much larger than that of the Yuan Dynasty; however, it was far from what the Qing would do.

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The Qing state increased copper mining in Yunnan because of local financial pressure. The Manchu control over Yunnan did not occur until 1682, when the Three Feudatories Rebellion was put down. The presence of a large military force in Yunnan, however, created a financial crisis, as the military expense reached more than 2.7 million taels of silver annually.<sup>136</sup> Postwar reconstruction hence pushed Cai Yurong, governor general, to explore local wealth by all means. In his 1682 memorial, Cai suggested four measures, of which two concerned copper minting and mining.<sup>137</sup> 68

Copper minting demonstrated the eagerness of the local government to seek wealth. The official price of silver was fixed at one tael equaling 1,000 copper coins, but the minting cost of 1,000 coins was less than one tael. The difference was called *yuxi* (surplus interest), a profit brought about by the minting project. At the time, Yunnan had thirty-six furnaces with an annual *yuxi* of over 40,000 taels. Cai Yurong proposed to increase the number of minting furnaces up to between 95 and 105.<sup>138</sup> If so, the annual *yuxi* might reach more than 100,000 taels. 69

The promotion of copper minting was also based on the fact that the metal was being mined already and was thus easily accessible in Yunnan. To encourage the mining, Cai drafted many regulations. He ordered local officials to examine the existing mines and to open new ones. Twenty percent of the copper produced was given to the state as tax and the rest was allowed to be sold in the market; Cai recommended that local officials be promoted when local copper taxes reached the equivalent of 10,000 taels of silver, and that investors be rewarded with buttons and sashes when they had paid taxes equivalent to 3,000 to 5,000 taels of silver.<sup>139</sup> So, local officials were given incentives such as promotion and investors had their eyes on profits and imperial honors and miners on salaries and presumably some profit also. These incentives proved Cai's approach to be very effective. The mining tax of 1706 in Yunnan was more than twenty times what it was in 1685.<sup>140</sup> Copper taxes were certainly a major contributor to the economic growth of the region. 70

Cai Yuyong's market-oriented regulations were the key to the development and prosperity of copper mining, as 80 percent of the output was allowed to be sold in markets. Logically, the denial of access to markets would destroy the enthusiasm of investors and miners, as new regulations issued by Bei Henuo would show. In 1705, Bei Henuo, governor general of Yunnan, launched a radical approach to enhance state control over the copper mining industry, aiming to gain more economic interest for the state.<sup>141</sup> The government provided state loans (*gongben*) to investors and miners before mining. After copper was produced, the government took 20 percent of the output as mining tax on the spot, and the rest, called *guantong* (official copper or state copper), was ordered to be sold to the government at a fixed price. A hundred *jin* of copper was valued from 3 to 6 taels of silver, depending on its quality. Moreover, the government's state loans (*gongben*) provided more control over investors. Some investors did not need state loans, but if they refused the loans, they were required to transport copper to Kunming themselves, where it was sold at the price of 5 taels per 100 *jin*. Considering the fact that mines were often located in mountainous areas, transportation would have tremendously 71

increased the cost for investors. Furthermore, the government, while purchasing copper at a fixed price, sold it in the market at the price of 9.2 taels for each 100 *jīn*. In addition, copper was prohibited from circulating in private markets. Offenders would be punished and have their copper confiscated. Finally, these new regulations not only squeezed profits from the copper industry for the state but also provided a new space and opportunities for corruption, as a state bureaucratic hierarchy oversaw, and was deeply involved with, this business. It is said that miners had to sell 150 *jīn* of copper to get a state loan for 100 *jīn*.

Bei's new regulations contrasted with those of Cai Yurong. Cai's measures gave freedom to investors and miners who, driven by profit, worked to develop copper production, whereas Bei ushered in strict state controls over this industry. By monopolizing this business, the state maximized its profit by taking profit from the pockets of investors and miners, and thus diminished their enthusiasm and eventually drove them away. That was why in the following eighteen years, only one mine was added to the existing seventeen, some of which were abandoned.<sup>142</sup> However, during the eighteenth century, the prosperity of Yunnan copper mining reached an unprecedented scale, unparalleled in the world at that time. The reason for the boom was indeed more global than local.

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The origin of the copper mining industry was the exploration of new sources to supply the military. Such a problem appeared in all other frontier areas as well. Frontier stability and the price to pay for that stability was a major concern of the Qing state.<sup>143</sup> To secure a frontier, the new conquered area that often faced international and local challenges, the Qing had to impose considerable military force, an unusual phenomenon in China proper. Simultaneously, the military expenditure added new pressure to the imperial financial system, sometimes to an unbearable degree. To solve the financial difficulty, the Qing government attempted to reduce its military presence as long as frontier stability was maintained. That is why the Qing government did not encourage Han immigration in all circumstances. In many cases, the Qing was wary of Han merchants, sojourners, miners, and peasants, who at times were considered a source of trouble in frontier areas, especially in the native chieftain territories. For example, the Qing government in both Taiwan and Yunnan made efforts to curb land transactions between Han people and the indigenes, tending to protect the indigenous population from Han exploitation. In this manner, local tension was contained to some degree, which in turn reduced the cost of administration.

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At the same time, efforts to increase revenue were made to relieve financial pressure. Taxation served as an immediate and standard measure, and it was supplemented by many other measures adopted in different circumstances. Copper mining and minting in Yunnan was just one of them. Nevertheless, taxation, especially of the indigenes, tended to increase tensions and conflicts on the frontiers. Consequently, the Qing government faced a catch-22: taxation on local resources was necessary in order to meet the demand of the military presence that was

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required for frontier control; however, taxation and especially overtaxation posed a risk to local stability. The Qing rulers adeptly kept these conflicting options balanced by minimizing the military cost by reducing the military presence and by reducing taxation.

Nevertheless, no matter how cautious the Qing government and its policies were, frontier areas often experienced many problems, even rebellion. Immigrants and the indigenes were two other actors on the frontier whose activities, decisions, and desires were very different from what the Qing expected and attempted to regulate. In addition, the enforcement of the Qing's policies, and their determination were implemented through a huge bureaucratic hierarchy on the frontier that on one hand compromised the central power, and on the other hand, consumed local sources. Finally, international players, such as Burma, and native chieftains in the southern borderlands proved to be beyond the Qing's control. The new regulation issued by Japan on the export of Japanese copper to Qing China, for example, pushed the Qing to explore the copper industry in Yunnan, a recently conquered frontier. 75

### **The Import and Decline of Japanese Copper**

Late imperial China was being monetarized. The Qing's monetary system was a bimetallic system of parallel standard in which silver and copper coins circulated.<sup>144</sup> Silver was usually used in large transactions and copper cash served in daily small deals. While the Qing state did not regulate silver minting or circulation, it imposed strict and detailed regulations on copper cash, especially in terms of minting and circulation. In fact, the Qing central monetary policy mainly handled issues of copper and copper cash.<sup>145</sup> In the 1750s and the 1760s, the peak time of copper minting, almost 4 million strings (that is, 4,000,000,000 coins) were produced annually (This figure was only exceeded by the Northern Song in a few years).<sup>146</sup> Han Ulrich Vogel estimates that from 1644 to 1844, the Qing government probably minted over 330 million strings, or 330,000,000,000 coins.<sup>147</sup> Hence, the significance of copper cash in the Qing economy can hardly be exaggerated. 76

The enormous amounts of copper cash posed a major challenge to the Qing government, that is, the procurement of copper sources. China had searched for copper ore ever since the Shang Dynasty. After long-term exploitation, copper mines in China proper were close to being exhausted under contemporary technologies. The late-Ming state began to import Japanese copper to make up for the dearth of copper (*tonghuang*).<sup>148</sup> The early Qing solved this problem by exploiting the Ming coins and scrap brass and by importing Japanese copper. The reuse of Ming cash and scrap brass was a temporary tactic, and eventually the Japanese import became the only source for the two imperial minting bureaus in Beijing (Baoquan and Baoyuan) until the large-scale copper production in Yunnan began. 77

As soon as the Manchus conquered China, the Qing rulers made efforts to procure Japanese copper.<sup>149</sup> While Chinese merchants were encouraged to import, imperial custom officials in Zhili, Shandong, Jingnan, Jiangxi, and Zhejiang were ordered to take responsibility for these copper imports.<sup>150</sup> However, the maritime trade with Japan was largely monopolized by the 78

Zheng Chenggong regime in Taiwan, who even sold Japanese copper to the British merchants.<sup>151</sup> Moreover, the 1656 maritime ban (*haijin*) by the Manchus further shut down the door to Japanese copper and exacerbated the shortage situation.

Table 6.3 Nagasaki's Refined Copper Exports to China and Holland, 1663-1715 (*jin*)

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Fortunately, the Qing managed to take over Taiwan in 1683 and by the next year, the maritime ban was lifted and ships were immediately dispatched to Nagasaki, the only port city in Japan that was allowed to receive foreign trade. Shortly after 1684, the Qing mints were totally dependent on Japanese copper, even when the Japanese authorities placed a quota on the copper exports to China.<sup>152</sup> In 1685, the Japanese authorities limited the Sino-Japanese trade on a yearly volume of 600,000 taels of silver. Under pressure from both the Chinese and Japanese traders, the figure was raised to 1.3 million taels in 1698.<sup>153</sup> Until 1715, the majority of Japanese copper flowed into China, as table 6.3 shows. Holland was the only Western country permitted to trade, and Japanese copper sold to Europe represented about half of what was sold to China.

While central and provincial minting furnaces were active in the 1650s and 1660s, copper became even more difficult to obtain. Some provincial factories were even forced to close down.<sup>154</sup> The scarcity of copper cash naturally increased its value, and 1 tael of silver was suddenly worth 700 copper coins.<sup>155</sup> To manage the problem, the Qing government in 1673 and 1679 repeatedly prohibited the use of copper for utensils weighing over 5 *jin*; and it was recommended that old copper coins and utensils be handed over to the government for minting.<sup>156</sup> In 1723, the Yongzheng emperor, in his first year in power, issued an edict asking governors in Yunnan, Guizhou, Guangdong, and Guangxi to negotiate with the king of Annam to make sure that copper exports from Annam were not banned.<sup>157</sup> In addition, it was proposed that the weight of coinage be reduced so that more coins could be minted.<sup>158</sup> Such short-term regulations certainly could not entirely solve the problem, were new sources not found. Wang Shizhen, a contemporary scholar-official who realized the seriousness of the problem, wrote, "China's economic ills were primarily her inability to import vitally needed Japanese copper."<sup>159</sup>

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The Japanese authorities were very concerned about the continuous outflow of silver and copper on a large scale. Finally in 1715, under the proposal of Arai Hakuseki, who believed that foreign trade would ruin the Japanese economy, the Bakufu decided to close its door, or more accurately, to increase its control over foreign trade. Under the 1715 regulations, the Chinese trade was cut in half, with a quota of thirty ships yearly and the trade volume limited to 600,000 taels of silver; additionally, the Chinese were not allowed to purchase more than 3 million *jin* of copper annually.<sup>160</sup> More importantly, the Japanese began to issue trade permits without which foreign ships would be turned around if they entered Nagasaki. These trade licenses deeply insulted Chinese dignity and sparked a debate in the Qing court, which bristled at the symbolism of the Japanese regulations that seemed to mimic the Chinese system in Guangdong and position the Qing under a Japanese tributary system. As a result, the year

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1716 saw a dramatic drop in Sino-Japanese trade. Emperor Kangxi, who saw his regulations only as commercially motivated and without political significance, eased the market by once again allowing Chinese merchants to enter Nagasaki.<sup>161</sup>

The continued curtailment by the Japanese of copper exports, however, was deeply felt by the Chinese and worsened the copper scarcity. The two mints in Beijing consumed more than 4.4 million *jin* of copper each year, and mainly depended on Japanese copper (*yangtong*). In the first decade of the eighteenth century, there were delays in the copper supply. Within a few years the unfilled quotas amounted to more than 1 million *jin*.<sup>162</sup> During the early 1720s, the figure reached nearly 4 million *jin*.<sup>163</sup> The Qing court repeatedly reprimanded local officials for the delays of copper. Consequently, the Qing state in the 1720s again reissued many short-term policies, including the purchase of old copper, a prohibition on the making copper of wares, a reduction of the copper content in coin cash, and copper wares used to pay taxes.<sup>164</sup> The prohibition in the use and making of copper wares lasted until the Qianlong reign (1736-1795).<sup>165</sup> The worsening dearth of copper caused by the new regulations of the Bakufu prompted the Qing government to turn to Yunnan and make great efforts to explore and control Yunnan copper. Yunnan copper, originally designed to resolve local financial difficulties, eventually served the empire's economy, supplying imperial subjects with abundant coins.

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### The Copper Mining Boom in Yunnan

While the Yongzheng emperor in his first years of his reign tried to obtain copper by all means possible, he relaxed government control over Yunnan copper production. Malpractice and abuses by Yamen clerks were prohibited, and more importantly, copper output was allowed to sell in markets as soon as taxes were paid and the provincial minting requirement was filled.<sup>166</sup> In addition, the copper tax of 1723 was fixed for the future, so that local officials no longer worried about increases that had tortured them previously.<sup>167</sup> These new regulations proved very effective, as the production of copper increased from over 1 million *jin* in 1724 to more than 2 million *jin* in 1726, and *yuxi* grew with the same speed.<sup>168</sup> From now on, the Yunnan copper mining industry entered its golden age.

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At the same time, local governors in Zhejiang and Jiangsu who were assigned to fill the quota of 4 million *jin* for the two minting bureaus in Beijing were unable to purchase enough Japanese copper and suggested that Yunnan copper be transported to Beijing. In 1716, the Qing government decided that the eight provinces (Zhejiang, Jiangsu, Anhui, Jiangxi, Hunan, Hubei, Fujian and Guangdong) altogether would be responsible for the supply of copper to minting bureaus in Beijing.<sup>169</sup> In fact, the other six provinces mainly relied on Zhejiang and Jiangsu for their quotas.<sup>170</sup> Facing the delays of Japanese copper, in 1724, Wu Shulin, governor of Zhejiang, proposed that the quotas of Hunan and Hubei be filled by Yunnan copper.<sup>171</sup> Wu's memorial indicated that Yunnan copper gained national attention, at least for those officials

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who were involved in the copper affair. However, his proposal was turned down, as Yunnan needed copper for its own minting operations. To be sure, the year 1724 saw the revival of Yunnan copper mines but the production barely met provincial demands.<sup>172</sup>

The sharp growth of copper production from the late 1720s in Yunnan, however, created a problem for local officials. More than 4 million *jin* of copper were produced in 1727, hence there was a surplus of about 2 million *jin*. It was decided that 1 million *jin* would be shipped to Hankou for Hunan and Hubei and the other million *jin* to Zhenjiang for Jiangsu Province.<sup>173</sup> All the copper was eventually moved to Beijing and it was the first time that Yunnan copper was transported to Beijing, a prologue to the eighteenth-century Yunnan copper drama. From then on, Yunnan copper gradually took the place of Japanese copper, and Yunnan was turned into the only supplier for the capital minting operation.

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It should be noted that Yunnan copper, in terms of quality and price, was not as attractive as Japanese copper. The official price of Yunnan copper was 9.2 taels for each 100 *jin*, plus 7 taels per 100 *jin* for the transportation cost from Yunnan to Beijing. The official price for Japanese copper was 14.5 taels for each 100 *jin*, plus about 3 taels of transportation cost (from Zhejiang or other Jiangnan ports to Beijing). It seemed that Japanese copper was a little more expensive, but indeed the Japanese price included the profit for imperial merchants, which was about 1.5 taels for each 100 *jin*. In addition, the quality of Japanese copper was better. In short, Japanese copper was actually a little cheaper overall, and it provided an opportunity for merchants. That is why Japanese copper was much preferred by the coastal provinces. For example, in 1727, Jiangsu did not want to purchase the 1 million *jin* of Yunnan copper due to the above reasons. Local officials preferred to wait for Japanese copper and were even willing to take the punishment for the delay of copper supply.<sup>174</sup> Had the Bakufu not limited its copper export, it would have been hard for Yunnan copper to compete with Japanese copper.

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Following the case of the above provinces, Guangdong in 1730 requested to purchase Yunnan copper for its quota, and the request was approved.<sup>175</sup> By now, Zhejiang, Jiangsu, Anhui, Jiangxi, and Fujian purchased Japanese copper, while Hunan, Hubei, and Guangdong turned to Yunnan. The latter three provinces purchased a yearly quota of 1,663,200 *jin* and from 1734 onward, the copper was minted in Guangxi Prefecture (in Yunnan; not to be mistaken with Guangxi Province).<sup>176</sup> However, the transportation of these coins proved an extremely difficult project, and in 1730, the minting operation in Guangxi was abolished and copper was instead shipped to Beijing.<sup>177</sup> In 1736, Jiangsu again asked to reduce the quota of Japanese copper and supplement it with Yunnan copper. As a result, it was decided that Japanese and Yunnan copper would each supply half of the yearly quota, that is, 2 million *jin* each.<sup>178</sup> In the following year, Yin Jishan, governor general of Yun-Gui, however, asked to take over the entire quota, in that the annual production in Yunnan could satisfy national demand. Yin's proposal was approved, so that Yunnan copper, first as the supplement for Japanese copper, eventually served as the only supplier for the imperial minting furnaces in Beijing.<sup>179</sup>

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Due to the abundance of Yunnan copper, in 1738 the quota was increased by 1,704,000 *jīn*, hence, Yunnan supplied Beijing with 5,704,000 *jīn* yearly. Since the content of Yunnan copper was about 95 percent, an extra 8 *jīn*, the so-called *haotong* (waste copper) was required to make up for each 100 *jīn*. In addition, the long-distance transportation from Yunnan to Beijing unavoidably led to some loss, so that another 3 *jīn* as *yutong* (surplus copper) was added. Therefore, each hundred *jīn* of copper demanded by Beijing would require Yunnan to ship 111 *jīn*. As a result, each year, Yunnan had to supply 6,331,440 *jīn* to meet the quota of 5,704,000 *jīn*. This figure was fixed in 1739.<sup>180</sup>

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Table 6.4 The Minting Operation in Yunnan, 1723-1802 (Annual Average)
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As stated above, Yunnan copper was originally used for provincial minting furnaces. The minting operation in turn provided a source of wealth for the province. At the end of the Yongzheng reign (1722-1735), considering the long-distance transportation, Yunnan copper was to be minted into cash before shipping to Beijing. However, this practice increased the difficulty of transportation, and was finally abolished in 1739.<sup>181</sup> Yunnan was also assigned to mint for other provinces, but this only lasted for a short period. Generally speaking, the long-lasting minting operation in Yunnan indeed served as a strong measure of provincial financial balance, as the following table shows that the government obtained over 6.5 million taels of profit through minting operations within eight decades.

An oversupply of copper cash would lead to a depreciation of cash, which was certainly realized by Qing officials. Indeed, the abuse of minting operations resulted in an extremely low price of copper in terms of its exchange rate with silver, thus sparking myriad social problems. After Cai Yurong had begun minting operations in Yunnan in 1681, copper cash was quickly devalued. While the official exchange rate between silver and copper was 1 to 1,000, the market rate in 1688 was in fact 1 to 3,000 or even lower.<sup>182</sup> Soldiers suffered a lot because their salary was partially paid by copper, which, to some extent, ignited the 1668 mutiny that forced Yunnan to stop minting.<sup>183</sup> In 1722, Yunnan resumed minting with new furnaces, although the exchange rate was worse than 1 to 1,700.<sup>184</sup> And the minting operation did not stop until 1810, except for the three years between 1794 and 1796.<sup>185</sup> In fact, the goal of this long-term minting project in Yunnan sharply contrasted with that of the imperial minting operation.

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While it is commonly assumed that imperial minting furnaces brought considerable profits as those in Yunnan did, Han Ulrich Vogel points out those imperial minting activities in fact resulted in a low or even nonexistent profit.<sup>186</sup> His study shows that before 1695, the Qing government obtained some income from minting operations; however, after 1700 the mints caused substantial deficits. And only with abundant Yunnan copper did the deficits disappear, with insignificant profit that made up of one-tenth of 1 percent of the total tax revenue.<sup>187</sup> Therefore, the minting mission was an economic project more for the empire-wide society than for the imperial government. The imperial government ran the mints because minting was

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thought to legitimize the state and thus it was its primary responsibility. By contrast, the minting in Yunnan was essentially a form of profit-making, designed to solve frontier financial problems. The profits were used to pay soldiers, to drain the Jinsha River, to facilitate the transportation of grain and copper, to subsidize the cooper mines, and to support other public projects.<sup>188</sup>

Table 6.5 Estimates of Yearly Copper Production in Yunnan

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Yunnan copper provided minting furnaces to other provinces as well, prior to which these provinces had either purchased Japanese copper or explored their own mines. In 1738, Sichuan, followed by Zhejiang, Jiangsu, Jiangxi, Hunan, Hubei, Fujian, Guangdong, Guangxi, Guizhou, and Shaanxi, appealed to purchase Yunnan copper.<sup>189</sup> During the Qianlong and Jiaqing reigns (1736-1820), Yunnan copper production amounted to over 10 million *jin* almost every year, as illustrated in table 6.5.

### The Qing Administration of Copper (*Tongzheng*)

When Yunnan became the only supplier of copper for the two minting bureaus in Beijing, the Qing government was very concerned about maintaining and ensuring the production of Yunnan copper. Hence, the management of Yunnan mines was no longer a provincial issue but an imperial project on which systematic regulations were imposed. Detailed regulations of the management of copper mines and the transportation of copper from Yunnan to Beijing were created, improved, and changed during the Yongzheng and Qianlong reigns. These regulations concerned each aspect of mining, including the opening and closing of mines, distribution and production, decisions of official price, wages of copper officials, foods for servants, repair of post houses, recruit of copper police, transportation deadlines, losses of copper on the way to Beijing, responsibilities of transportation commissioners and local officials, and so on. These affairs, large and small, had to be reported and thus handled by the imperial edicts that would set up the resolution for future similar cases.<sup>190</sup> The state control reached such a degree that the copper mining and transportation were incorporated into the imperial administrative hierarchy, and the all affairs around copper manufacture came under *tongzheng* (copper administration). Because local officials found it very easy to make a mistake, they regarded the copper administration as an exhausting administration (*huangzheng*).<sup>191</sup> The copper mining in Yunnan was far more than an industry.

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The Qing state made many efforts to secure the supply of copper. One major imperial measure was to provide the state loan of 1 million taels for copper mines. In 1738, the Qing government decided to take 1 million taels each year for the procurement of copper.<sup>192</sup> From this figure, 163,000 taels were specifically designed for the transportation fees; the rest of the 837,000 taels were loaned to investors and miners.<sup>193</sup> The 873,000 taels of state loan (*gongben*) were provided to mines on short-term and long-term bases. The short-term loan was called a monthly loan (*yueben*) that was distributed at the beginning of one month and collected in the

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form of copper that was produced in the following month.<sup>194</sup> The long-term loan (*diben*) varied in terms of period and the quantity of taels. Some mines were loaned tens of thousands of taels, and could take out loans for ten years.<sup>195</sup>

By supplying loans, the Qing government attempted to reduce the fluctuation of copper production as much as possible. Copper mining activities required a relatively big investment, and so many miners and investors allied to operate a mine. Miners (usually in the form of households) who lacked financial sources sometimes operated a mine by a joint unity of as many as forty households.<sup>196</sup> Copper, unlike silver, was not a ready money when produced; hence a fluctuating price would more or less influence the mining industry. The government loan provided a stable profit as soon as the gap between official price and the market price was negligible, or as soon as the government left relative profit to ensure the enthusiasm of investor and miners. At this point, the official price determined both the prosperity and decline of the copper mining industry in Yunnan. 95

Another major act was to incorporate the procurement of copper into the imperial administrative system. The whole imperial hierarchy, from the emperor to the governor to local magistrates and clerks, was mobilized to oversee this project. While the emperor himself read and commented on the memorials on the copper production and transportation, all government officials, from governor general downwards, were held collectively responsible for the procurement of copper. In Yunnan, theoretically, the governor general (*zongdu*), the governor (*xunfu*), and the provincial treasurer (*buzhengshi*) were in charge of the copper administration, but it was the provincial treasurer who supervised the whole system. Transportation was handled by designated transportation commissioners, and mines were under local officials of prefecture (*fu*), subprefecture (*zhou*), county (*xian*), and subcounty (*ting*) where mines were located. 96

Local officials, such as magistrates, though given responsibility for the mines, were unable to supervise copper mining activities on the spot, since mines were usually located in mountains and because they were occupied with other administrative obligations. As an alternative, commissioners (*changyuan*) were selected as their representatives to stay in mines all year long so that copper mining activities would come under even closer supervision by the government. The major duty of these commissioners was to ensure that the government quotas were fulfilled. Their work included two tasks: distributing state loans and collecting copper. If he failed, the individual commissioner would face fines or even a removal from his position. If a mine was unable to repay a state loan by the deadline in the form of copper, the deficit was called *changqian* (literally, "what a mine owes"). If *changqian* could not be paid back by miners, commissioners and their supervisors up to the governor general were required to pay back the amount. The governor general and the provincial governor together would repay one share, or 10 percent, of *changqian*, and the provincial treasurer would repay another share. The prefect or the local magistrate who directly supervised the operation had to pay two 97

shares, and the commissioners had to pay the remaining six shares. In this manner, the Qing state not only guaranteed itself a constant supply of copper but also protected itself from any loss of state investment.<sup>197</sup>

Detailed regulations did not suggest that the government directly controlled the mining production activities. The management of mines was autonomously organized by seven leaders (*qizhang*) who were selected by the investors or miners themselves.<sup>198</sup> The seven heads were *xiangzhang* or *xiangzhang* (general chief), *dongzhang* (mining chief), *kezhang* (tax chief), *kezhang* (mediator), *tanzhang* (charcoal chief), *lutou* (furnace chief), and *guotou* (chef).<sup>199</sup> Each of them had different responsibilities and they ensured the organization of all details of production procedures, thus insuring the daily running of the mines. 98

While daily mining activities were left for the miners themselves, the transportation of copper from mines to government storehouses, and eventually to Beijing, was another major government project with tedious regulations. *Jingyun*, or the transportation of copper from Yunnan to Beijing, was an unprecedented challenge in Chinese history in terms of its long distance, large quantity, and extreme difficulty. It even dwarfed the transportation of grains through the Grand Canal. The copper transportation involved two steps: first, moving copper from mountainous mines to ports near the Yangzi River, and second, shipping copper on the Yangzi River and then up the Grand Canal to Beijing. The distance was over 100,000 *li* (approximate 3,500 miles). Without any modern technology, such as steam ships or trucks or trains, it was probably the largest transportation project in the world before the nineteenth century, and it could not have been done without a strong government and a well-run system. 99

While the strict institutionalization by the Qing government had succeeded in securing copper, the state penetration was in fact a double-edged sword that finally caused the decline of copper production. Many elements contributed to the decline, such as the lack of technological innovation and the exhaustion of copper mines. But the key issue was the relatively low official price for copper, especially when the former two elements led to the increase of the cost. 100

The official price for copper had been lower than its production cost since the 1705 regulations.<sup>200</sup> Had 10 percent of copper output not been allowed to be sold on the market, no one would have joined the business. The lower official price directly caused the long-lasting financial woes of the mines, that is, *changqian*. As early as the beginning years of the Qianlong reign, when the mining industry was prospering, state loans were unable to be paid back on time.<sup>201</sup> In 1755, the official price for every 100 *jīn* was almost 0.85 tael lower than the mining cost.<sup>202</sup> The deficit of 0.85 was not filled until two years later by increasing the official price twice.<sup>203</sup> By 1767, *changqian* had reached over 137,000 taels.<sup>204</sup> To solve *changqian*, the Qing government forced the market copper (10 percent of copper output) to be sold to provincial minting bureaus, and the province deduced 10 percent of the state loan to make up *changqian*. These measures succeeded in removing *changqian* from government records, but the real situation was never improved.<sup>205</sup> The low or nonexistent profit eventually exhaustion the 101

mining industry. Although the Qing government kept making efforts to reenergize even during the nineteenth century, the essential problem of the low official price was never solved. The Opium War and the Muslim Rebellion during the mid-nineteenth century finally sealed the demise of the copper mining industry.<sup>206</sup> The former blocked the transportation, and the latter, partially sparked by the mining business, destroyed the industry.

The copper mining industry in Yunnan was not only integral to the Qing monetary system and thus its economy but also left a deep legacy in local society. First, it provided employment for thousands of people. The proportion of miners in Yunnan was certainly much higher than the national average. Such a large number of miners in a frontier province were unique, since they were usually thought to be a potential threat to the social order. Both the Ming and the Qing states actually kept a close eye on miners in Yunnan. And finally, trivial clashes between Han and Muslim miners and merchants caused the Muslim Rebellion that nearly overthrew the Qing administration in Yunnan. **102**

The mining industry also dramatically changed the landscape. Copper and other mineral mining activities were extremely destructive to the local ecology. Mines were usually located in mountains, which were skinned of their plants and trees. Tunnels extended several hundred or thousand meters into mountains, and down into the earth. Rivers and streams became dark and dirty, filled with mineral remains. Animals were forced to migrate. Tens of thousands of miners lived in the environment that previously had rarely been disturbed by human beings. These people ate, heated, housed, and produced waste. Such direct environmental impact was minimal when compared to the diverse indirect impact. Contemporary mining technology required a great deal of charcoal to melt mineral sources. It is commonly estimated that each 100 *jin* of copper needed 1,500 *jin* of charcoal. Considering the enormous output of copper in Yunnan, how many trees had to be cut down and made into charcoal? Abundant as the Yunnan forest was, miners and officials in the early nineteenth century complained that it was hard to obtain enough charcoal within a reasonable distance. Ecological conditions thus checked the production and reproduction of the mining industry. Moreover, the decline of copper production shed some light on the hardship of the late Qing state to reproduce its society, which would also happen to the Huang-Yun region as shown in Pomeranz's study.<sup>207</sup> **103**

The development and decline of the copper mining industry in Yunnan was a result of the imperial political economy. The government monopoly accounted for its boom as well as its collapse, a similar repetition of Song China's state penetration that destroyed the Sichuan tea and horse trade.<sup>208</sup> State control over local industries, while meeting imperial demands (for warhorses, minting sources, and profits), eventually caused the collapse of local industries. As the extremely large quantities of local resources were exported to serve imperial economy, the issue of copper procurement and other aspects of Yunnan in the Qing period may throw some light on William Skinner's macroregion paradigm. **104**

## Testing Skinner's Macroregion

William Skinner's macroregional approach to Chinese studies has been a remarkable theoretical strategy to break up the giant Chinese empire into tangible units for the purpose of analysis. He argues that "separate urban systems developed in each of the major physiographic regions into which agrarian China may be divided, and as late as the mid-nineteenth century, economic and administrative transactions between these discrete systems of cities were too attenuated to bind the parts into an integrated empire-wide urban system."<sup>209</sup> Skinner classifies nine macroregions in late imperial China: Lingnan, Upper Yangtze, Middle Yangtze, Lower Yangtze, Northwest China, North China, Yunnan-Guizhou, Southeast Coast, and Manchuria. As a self-contained unit, each of these macroregions had its own center and periphery, and the development of the center relied on the underdevelopment of its periphery, except for the Yun-Gui macroregion, which lacked an internal system because of the relative underdevelopment in this mountainous area. 105

Skinner's quantitative studies and theoretical constructions have aroused many interesting discussions. For example, in their article, "The Spatial Approach to Chinese History: A Test," Barbara Sands and Ramon H. Myers have carried a series of empirical tests of Skinner's theory and concluded that Skinner's concepts are "difficult to test," "seriously flawed," and "lack real explanatory power."<sup>210</sup> Recently, Cao Shuji has questioned Skinner's statistics.<sup>211</sup> Cao points out that Skinner's eight macroregions (excluding Manchuria) disturbed the administrative system of the Qing Empire, on which national population statistics was based. While Qing China's census, based on provincial reports, was somewhat problematic, statistics by lower units, such as prefectures, on which Skinner's studies were built, were much more unreliable. Cao examines Shandong's urban population and extends its pattern to northern China, and he concludes that urbanization in imperial China was not decided so much by urban population as by the total population in the discussed region. The population growth rate in urban China was not as fast as that in rural China and it is the latter figure that accounted for the low degree of urbanization. In essence, Cao contends that the lack of credibility of census by prefectures and lower units in imperial China greatly weakened Skinner's thesis. 106

This section will use the case of Yunnan (Yunnan-Guizhou macroregion) to examine some assumptions and conclusions Skinner holds for this macroregion. First, Skinner's Yun-Gui macroregion does not pay appropriate attention to cross-regional connections between Yunnan and Southeast Asia and beyond. Chiranan Prasertkul's study questions Skinner by bringing up the prosperity of international trade among Yunnan, Burma, and other areas in the nineteenth century.<sup>212</sup> As the river system has linked Yunnan to other Southeast Asian areas, he suggests that Yun-Gui should not be treated as a unit. Furthermore, Prasertkul argues that the essential flaw of Skinner's macroregions is that he treats China as a fundamentally agrarian polity, underestimating the commercialization in late imperial China, which agrees with James Lee's studies. Second, Skinner points out that within the eight macroregions, Yunnan-Guizhou was the slowest in terms of urbanization. Its urbanization rate was 4.1 percent, compared with 7.9 107

percent in Lower Yangzi.<sup>213</sup> James Lee's quantitative scrutiny instead provides a different landscape. While Lee acknowledges that the Southwest before 1750 was largely rural, with only one city (Lin'an) with a population of 50,000, by 1830, the urbanization rate of the Southwest reached nearly 10 percent, two times what Skinner suggested and what James Lee believed existed in the late sixteenth century.<sup>214</sup> Moreover, the total nonagricultural workforce in the Southwest by the early nineteenth century may have amounted to 1.5 million, about 12 percent of adult laborers.<sup>215</sup> With his thorough comprehension of local gazetteers, I believe James Lee's conclusion is more reliable. Then, the question arises, why does the Yun-Gui urbanization not fit into Skinner's analysis?

Skinner sees Yunnan-Guizhou as "a congeries of five small, fairly autonomous central-place systems whose centers were widely dispersed in terms of travel time and only very tenuously interrelated"; thus he concludes that an urban system in Yun-Gui was, "at best[,] emergent in 1843."<sup>216</sup> He largely ignores international trade and the commercialization emphasized by Chiranan Prasertkul, and the cross-macroregional immigration, commercialization, and state-sponsored mining industry stressed by James Lee. All of these elements contributed to urbanization in Yunnan and Guizhou, which contradicts Skinner's general statement that urbanization in late imperial China was largely an extension and intensification of the core areas in medieval times.

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Furthermore, James Lee's studies have demonstrated that a local central/peripheral system was established in eighteenth-century Yunnan, in which the periphery provided grains to the urban centers. Underlying the difference between these two scholars are their approaches. Skinner's macroregion pattern is based on physiographic features that naturally characterized each unit, while James Lee's approach is based on political economy. Hence, the imperial power that played a decisive role in shaping the frontier economy and society is rarely seen in Skinner's approach, although Skinner is right to point out the heavy administrative presence in the frontier area. Immigrants and the mining industry, which determined the urbanization in Yunnan, for example, were either state-sponsored or planned. The copper mining and transportation have demonstrated the connection between the periphery and the center in an empire-wide context, that is, political economy accounted for the underdevelopment in the periphery and prosperity in the core areas. With no modern technology, such long-distance transportation (over 3,500 miles) of such a large amount of metal source was an incredible project. Hence physiographic features or pure economic considerations are too weak to account for this giant, well-regulated shipment. In fact, even Skinner himself cannot help but wonder "in what ways the exceptional development of such regions as the Lower Yangtze was dependent on underdevelopment in interior regions, and to what extent development in the cores of regions caused underdevelopment on their peripheries."<sup>217</sup>

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While the case of Yun-Gui challenges Skinner's macroregional approach, which seems unable to reveal the "urbanization and regional formation, especially social and cultural practices, long-distance trade, and associated activities," as Carolyn Cartier argues,<sup>218</sup> Hans Ulrich Vogel's

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study on the long-term exchange rate between copper cash and silver referred to the possibility of a national money market in the Qing period. He illustrates that "most provinces and macroregions exhibited similar long-term development."<sup>219</sup> The only exception was Yunnan, because of the oversupply of copper cash there. Hence, Vogel suggests that "a tentative conclusion would therefore be that in most macroregions, or at least in the core of most macroregions, the long-term development of the market exchange rate was rather uniform, which points to the emergence of a national money market."<sup>220</sup> In summary, there probably emerged a national money market in Qing China, thanks to the abundant supply of copper from Yunnan.

## Conclusion

During the Ming-Qing period, China imported both silver and copper in large amounts. This fact might have obscured the significance of Yunnan in the late imperial economy. Before and after New World silver arrived in China, Yunnan silver contributed to the Ming monetarization. After the decline of Japanese copper imports, Yunnan copper became the only major supplier for the Qing minting operations. As a world economy, late imperial China's influence indeed extended into East Asia and Southeast Asia, which again urges us to think of Yunnan in a broad context. 111

Yunnan silver in the Ming period, copper cash replacing cowry currency during the Ming-Qing transition, and Yunnan copper in the Qing period, collectively demonstrated the central penetration over the frontier on the one hand and the significance of a frontier in the Chinese world-economy on the other hand. Thus, Yunnan's case contrasted with the incorporation of the American southwestern frontier by a modern European world-system, which, as Thomas Hall has pointed out, greatly influenced the Southwestern frontier but did little to affect the modern world-system.<sup>221</sup> 112

International elements contributed to the reorientation of Yunnan's economic trajectory into the Chinese world. The expansion of the European world-system and the Japanese 1715 regulation both helped the Chinese economic incorporation of Yunnan. While a regional central-peripheral structure was created within Yunnan in the Qing period, Yunnan also needs to be understood as part of an empire-wide, central-peripheral structure. 113

Nonetheless, the key contributions of Yunnan to China should not be stressed only materially. Indeed, the incorporation of Yunnan to a large extent has helped shape the image and existence of China as a multiethnic unity. As sinicization and indigenization created the Yunnanese identity, imperial states at the same time gradually changed their tones, thus regarding ethnic groups in this frontier province as imperial subjects. Both the Nationalists and Communists have continued this trend and accepted the legacy by classifying ethnic peoples as younger brothers in the large Chinese nationality family. 114

## Notes

**Note 1:** Jin Zhengyao, "Wanshang Zhongyuan Qingtong de Kuangliao Laiyuan Yanjiu" (A study on the sources of bronzes of late Shang period in the Central Plain), in *Kexueshi Lunji* (Works on the history of sciences), ed. Fang Lizhi (Hefei: Zhongguo Keji Daxue Chubanshe, 1987), 365-386; Li Xiaocen, "Shangzhou Zhongyuan Qingtongqi Kuangliao Laiyuan de zai Yanjiu" (A further study on the sources of ores for the Central Plain bronze vessels of the Shang-Zhou period), *Ziran Kexueshi Yanjiu* 12, no. 3 (1993): 264-267.

**Note 2:** *HS*, *juan* 24, in *YNSLCK* 1: 39.

**Note 3:** *HHS*, *juan* 86, in *YNSLCK* 1: 57; *HYGZ*, *juan* 4, *YNSLCK* 1: 252.

**Note 4:** *HYGZ*, *juan* 4, in *YNSLCK* 1: 252.

**Note 5:** *HYGZ*, *juan* 4, in *YNSLCK* 1: 254.

**Note 6:** *Taping Yulan*, *juan* 813, in *YNSLCK* 1: 205.

**Note 7:** *Man Shu*, *juan* 7, in *YNSLCK* 2: 67.

**Note 8:** *Man Shu*, *juan* 8, in *YNSLCK* 2: 66.

**Note 9:** Yunnansheng Wenwu Gongzuodui, "Dali Chongshengsi Santa de Shice he Qingli" (The measuring and clearing of the three Pagodas in the Chongsheng Monastery, Dali), in *Ershi Shiji Dali Kaogu Wenji* (Works on Dali archaeology in the twentieth century), ed., Dali Baizuzizhizhou Wanglingdiaochaoketizu (Kunming: Yunnan Minzu Chubanshe, 2003): 471-499.

**Note 10:** *Man Shu*, *juan* 8, in *YNSLCK* 2: 73.

**Note 11:** *Yuan Shi*, *juan* 42, *YNSLCK* 2: 647.

**Note 12:** *Yuan Shi*, *juan* 94: 1596.

**Note 13:** Quan Hansheng, "Mingqing Shidai Yunnan de Yinke yu Yinchan'e" (Silver taxation and silver output in Yunnan during the Ming-Qing period), *Xinya Xuebao* 11 (1967): 62.

**Note 14:** *Makeboluo Yunnan Youji*, in *YNSLCK* 3: 142.

**Note 15:** *Ibid.*, 147.

**Note 16:** Song Yingxing, *Tiangong Kaiwu* (Exploitations of works of nature), annotated by Zhong Guangyan (Guangzhou: Guangdong Renmin Chubanshe, 1976), 343-344.

**Note 17:** *Mingyingzong Shilu*, *juan* 290, in Li Chunnong ed., *Yunnan Shiliao Xuanbian* (Selected sources on Yunnan) (Kunming: Yunnan Minzu Chubanshe, 1998): 535.

**Note 18:** *Ibid.*

**Note 19:** Quan Hansheng, "Mingdai de Yinke yu Yinchan'e" (China's silver mining tax and silver output during the Ming Dynasty), *Xinya Shuyuan Xueshu Niankan* 9 (1967): 245-267.

**Note 20:** Quan Hansheng 1967, 245-267.

**Note 21:** James Lee, "State-Regulated Industry in Qing China, The Yunnan Mining Industry: A Regional Economic Cycle, 1700–1850," paper presented at the 1984 Conference on Spatial and Temporal Trends and Cycles in Chinese Economic History, 980-1980, sponsored by the ACLS and SSRC, at Bellagio, Italy, August 17–23, 1984, p. 3, cf. Armijo-Hussein, Jacqueline Misty 1996, 179.

**Note 22:** *Ming Shi*, *juan* 314, in *YNSLCK* 3: 454.

**Note 23:** *Ibid.*

**Note 24:** John Deyell 1994.

**Note 25:** John Deyell 1994, 119.

**Note 26:** For imperial sources, see *YNSLCK* 4: 126-128.

**Note 27:** Richard Von Glahn, *Fountain of Fortune: Money and Monetary Policy in China, 1400–1700* (Berkeley, Los Angeles, and London: University of California Press, 1996), 1.

**Note 28:** Von Glahn 1996, 7

**Note 29:** *Ibid.*, 8.

**Note 30:** U. Thakur, "A Study in Barter and Exchange in Ancient India," *Journal of Economic and Social History of the Orient* 15 (1972): 297-315.

**Note 31:** U. Thakur concludes that barter constituted the main system of trade in India until the eleventh or twelfth century. In the case of Yunnan, barter lasted even longer, as revealed by the trade between Song China and Dali. Copper cash did not dominate markets in Yunnan until the eighteenth century, when the circulation of cowry money stopped. During the nineteenth and twentieth centuries, barter was still popular in the Yunnan foreign trade. See Thakur 1972.

**Note 32:** For the spread of cowries in East Asia, see Namio Egami, "Migration of Cowrie-Shell Culture in East Asia," *Acta Asiatica* 26 (1974): 1-52.

**Note 33:** For the advantages of cowry money and cowries in slave trade, see Jan. Hogendorn and Marion Johnson, *The Shell Money of the Slave Trade* (Cambridge: Cambridge University Press, 1986).

**Note 34:** James Heimann, "Small Changes and Ballast: Cowrie Trade and Usage as an Example of Indian Ocean Economic History," *South Asia* 3, no. 1 (1980): 56.

**Note 35:** Zheng He's treasure fleet visited the Maldives several times. See Roderich Patk, "The Maldivian and Laccadive Islands (Liu-shan) in Ming Records," *Journal of the American Oriental Society* 107, no. 4 (1987): 675-694.

**Note 36:** Yang Shouchuan, "Beibi Yanjiu: Zhongyuan yu Yunnan yong Haibei zuo Huobi de Lishi" (Studies on cowry: Historical survey on the cowry as currency in the Central Plain and Yunnan), in *Beibi Yanjiu* (Studies on the cowry currency), ed. Yang Shouchuan (Kunming: Yunnan University Press, 1997).

**Note 37:** The later Spring-Autumn Period (770 BCE–476 BCE) or the Warring State period (475 BCE–222 BCE), the Qin-Han period, and the ninth century are the main opinions. See *Beibi Yanjiu* (Studies on the cowry currency), ed. Yang Shouchuan (Kunming: Yunnan University Press, 1997).

**Note 38:** Michèle Pirazzoli-t'Serstevens, "Cowry and Chinese Copper Cash As Prestige Goods in Dian," in *Southeast Asian Archaeology 1990: Proceedings of the Third Conference of the European Association of Southeast Asian Archaeologists*, ed. Ian Glover, Central for South-East Asian Studies, University of Hull, 1992, 49.

**Note 39:** Hans Ulrich Vogel, "Cowry Trade and Its Role in the Economy of Yunnan: From the Ninth to the Mid-Seventeenth Century (Part I)," *Journal of the Economic and Social History of the Orient* 36, no. 3 (1993): 246-247.

**Note 40:** In the 2003 AAS Convention, a panel on China's archaeology stated that cowries were also found in the Xin'gan site (Jiangxi) of late Shang period. After considering the distance, it seems likely that they were from the Pacific. But what the similarities are among these cowries (Jiangxi, Sichuan, and Yunnan) remains unclear.

**Note 41:** Paul Pelliot, *Notes on Marco Polo* (Paris: Imprimerie Nationale, 1959), 531-563.

**Note 42:** Fang Guoyu, *Yunnan Shiliao Mulu Gaishuo* (Beijing: Zhonghuashuju, 1984), Vo1.1, 2; Fang Guoyu 2001, 2: 373-375.

**Note 43:** Hans Ulrich Vogel 1993, 220.

**Note 44:** Li Jing, *Yunnan Zhilue*, in *YNSLCK* 3: 128.

**Note 45:** *Ibid.*, 130.

**Note 46:** *Yuan Shi, juan* 126, in *YNSLCK* 2: 557.

- Note 47:** *Yuan Shi*, *juan* 9, in *YNSLCK* 2: 489.
- Note 48:** *Yuan Shi*, *juan* 94, 1595-1596.
- Note 49:** *Yuan Shi*, *juan* 176, in *YNSLCK* 2: 598.
- Note 50:** Cf. Fang Hui, 149-150.
- Note 51:** *Yuan Dianzhang*, *juan* 20, Cf Fang Hui 1997a, 151.
- Note 52:** *Yuan Shi*, *juan* 21, in *YNSLCK* 2: 500.
- Note 53:** *Mingxianzhong Shilu*, *juan* 222, in *YNSLCK* 4: 163.
- Note 54:** *Mingtaizu Shilu*, *juan* 241, in *YNSLCK* 4: 162.
- Note 55:** *Mingtaizong Shilu*, *juan* 16, in *YNSLCK* 4: 162.
- Note 56:** *YNSLCK* 7: 292-294.
- Note 57:** Fang Hui 1997a, 132.
- Note 58:** Li Jiarui 1997, 110-111; Fang Hui 1997a, 133-134.
- Note 59:** *Mingyingzong Shilu*, *juan* 35, in *YNSLCK* 4: 162.
- Note 60:** *Mingyingzong Shilu*, *juan* 68, in *YNSLCK* 4: 162.
- Note 61:** *Mingtaizong Shilu*, *juan* 116, in *YNSLCK* 4: 162.
- Note 62:** Li Jiarui 1997, 112.
- Note 63:** Ni Tui 1992, 588.
- Note 64:** Han Ulrich Vogel, "Cowry Trade and Its Role in the Economy of Yunnan: From the Ninth to the Mid-Seventeenth Century (Part II)," *Journal of the Economic and Social History of the Orient* 36, no. 4 (1993): 319.
- Note 65:** *Mingshizong Shilu*, *juan* 421, in *YNSLCK* 4: 163.
- Note 66:** *Mingshizong Shilu*, *juan* 461, in *YNSLCK* 4: 163-164.
- Note 67:** Ni Tui of the Qing period pointed out that "the commoners used cowries as usual, and copper cashes were not able to circulate" (*minjian yong ba rugu, qian jing buxing*). See Ni Dui 1992, 570.
- Note 68:** *Mingshenzong Shilu*, *juan* 48, in *YNSLCK* 4: 164.
- Note 69:** Ni Tui 1992, 570.
- Note 70:** *Ibid.*
- Note 71:** *Mingxizong Shilu*, *juan* 61, in *YNSLCK* 4: 165.
- Note 72:** Min Hongxue, "Tiaoda Qianfashu," in *YNSLCK* 4: 673-677.
- Note 73:** *Mingxizong Shilu*, *juan* 83, in *YNSLCK* 4: 164
- Note 74:** Ni Dui 1992, 570-571.
- Note 75:** Jiang Yingliang, "Yunnan Yong Bei Kao" (On cowries in Yunnan), in *Beibi Yanjiu* (Studies on the cowry currency), ed. Yang Shouchuan (Kunming: Yunnan University Press, 1997), 81-93.
- Note 76:** Yang Shouchuan, "Yunnan yong Haibei zuo Huobi de Lishi Kaocha" (A historical survey of cowry in Yunnan), in *Beibi Yanjiu* (Kunming: Yunnan University Press, 1997), 122-123.
- Note 77:** Yang Shouchuan 1997c, 122-123.
- Note 78:** Yang Shouchuan, "Lun Mingqingzhiji Yunnan 'Feibeishiqian' de Yuanyin" (On the reason for the replacement of cowry by copper as currency in Yunnan during the Ming and Qing dynasties), in *Beibi Yanjiu* 1997, 162-164.
- Note 79:** Fang Guoyu, "Yunnan yong Bei zuo Huobi de Shidai ji Bei de Laiyuan" (The date and source of cowry as currency in Yunnan), in *Beibi Yanjiu* 1997, 54.
- Note 80:** Fang Guoyu 1997, 56.

**Note 81:** Zhang Bincun, "Shiqi Shiji Yunnan Beibi Bengkui de Yuanyin" (Reasons for the collapse of Yunnan cowry currency in the seventeenth century), in *Beibi Yanjiu* 1997, 172-208.

**Note 82:** Hans Ulrich Vogel 1993.

**Note 83:** Lu Ren 2001, 136-137.

**Note 84:** For the Indian Ocean trade structure, see James Heimann 1980, 48-69.

**Note 85:** Janet Abu-Lughod, "Discontinuities and Persistence: One World System or a Succession of Systems?" in *The World System, Five Hundred or Five Thousand?*, ed. Andre Gunder Frank, and Barry K. Gills (New York: Routledge, 1996), 279.

**Note 86:** For the definition of "world-economy" and its difference from "world-system," see Immanuel Wallerstein, *The Modern World System* (New York: Academic Press, 1974, 1980, and 1988).

**Note 87:** Wallerstein 1974, 1980, and 1988.

**Note 88:** Janet L. Abu-Lughod, *Before European Hegemony* (New York and Oxford: Oxford University Press, 1989). Her world-system is more like a trade network, while Wallerstein pays more attention to a structurally integrated division of labor.

**Note 89:** For world-system theories and debates, see Andre Frank and Barry K. Gills 1996, and many articles in *Review*.

**Note 90:** Ranabir Chakravarti 1999, 194-211.

**Note 91:** Abu-Lughod has noticed this fact, but she accredits it only to the overseas trade, a maritime mentality labeled by Sun Laichen. Janice Stargardt has presented an excellent illustration of how overseas and overland trade shaped local powers in coastal and Upper Burma. See Janice Stargardt 1971.

**Note 92:** Heimann 1980, 56-58.

**Note 93:** *Ibid.*, 48.

**Note 94:** *Ibid.*, 48.

**Note 95:** Abu-Lughod indeed puts Yunnan into her East Asian subsystem. I believe that from 1250 to 1350 Yunnan at least should be regarded as part of the overlapping area between Circuit VII (the Bengal Bay region) and VIII (East Asia). See Abu-Lughod 1989, 34.

**Note 96:** For this word, see William McNeill 1991, XXII.

**Note 97:** James Lee 1982, 279-304.

**Note 98:** *Ibid.*, 282.

**Note 99:** Lu Ren 2001.

**Note 100:** James Lee 1982, 285-286.

**Note 101:** James Lee 1982, 293-294.

**Note 102:** *Ibid.*, 294.

**Note 103:** *Ibid.*, 295.

**Note 104:** *Yunnan Tongzhi* (Daoguang edition), *juan* 43-47, in *YNSLCK* 11: 681-791; Fang Guoyu 2001, Vol. 3, 581-582.

**Note 105:** Fang Guoyu, "Gaishuo" (General introduction), in *YNSLCK* 11: 678; *Yunnan Tongzhi* (Daoguang edition), *juan* 45, in *YNSLCK* 11: 717-719.

**Note 106:** *Ibid.*

**Note 107:** Fang Guoyu, "Gaishuo" (General Introduction), in *YNSLCK* 11: 676-677; *Yunnan Tongzhi* (Daoguang edition), *juan* 46-47, in *YNSLCK* 11: 740-791.

**Note 108:** *Yunnan Tongzhi* (Daoguang edition), *juan* 45, in *YNSLCK* 733-736; Fang Guoyu 2001, Vol. 3, 582.

**Note 109:** *Weiyuanting Zhi* (Daoguang), *juan* 3; Fang Guoyu, "Gaishuo" (General introduction), in *YNSLCK* 11: 677-678.

**Note 110:** Zhang was a group of tropical and subtropical diseases among which malaria was the main killer. The Chinese suffered a great deal when advancing southward in its history.

**Note 111:** Fang Guoyu, "Qingdai Gezu Laodongrenmin dui Shanqu de Kaifa" (The exploitation of the mountainous areas during the Qing period), in *Fang Guoyu Wenji* (Works of Fang Guoyu), 2001, Vol. 3, 583.

**Note 112:** *Ibid.*

**Note 113:** Cf Fang Guoyu, "Gaishuo" (General introduction), in *YNSLCK* 11: 677-678.

**Note 114:** *Yuanjiang fu Zhi* (Daoguang edition), *juan* 3, cf. Fang Guoyu, "Gaishuo" (General introduction), in *YNSLCK* 11: 677.

**Note 115:** *Puerfu zhi* (Daoguang edition), *juan* 7, cf. Fang Guoyu, "Gaishuo" (General introduction), in *YNSLCK* 11: 677.

**Note 116:** *Yunnan Tongzhi* (Daoguang edition), *juan* 30.

**Note 117:** Jiang Ruiyuan, "Tiaochen Jicha Suoshu Yisi Shiyi," cf. Fang Guoyu, "Gaishuo" (General introduction), in *YNSLCK* 11: 679.

**Note 118:** Fang Guoyu 2001, Vol. 3, 586-587.

**Note 119:** By the eighteenth century, corn and tomato had been major crops not only for Han immigrants, but also for ethnic minority peoples, such as the Yi.

**Note 120:** James Lee 1982, 298.

**Note 121:** *Ibid.*, 298.

**Note 122:** *Ibid.*, 299

**Note 123:** *Ibid.*, 742.

**Note 124:** Xie Shengguan (Qing), *Dianqian Zhilue* (A concise record of Yunnan and Guizhou), Vol.6, *juan* 14, 17a, manuscript, Yunnan University Library, 1964.

**Note 125:** Wu Daxun (Qing), *Diannan Wenjianlu*, in *YNSLCK* 12: 17.

**Note 126:** James Lee 1982, 712.

**Note 127:** *Ibid.*, 729.

**Note 128:** *Ibid.*, 297.

**Note 129:** *Ibid.*, 712.

**Note 130:** *Ibid.*, 731. The following is a summary of Lee's study. See *ibid.*, 711-746.

**Note 131:** *Ibid.*, 304.

**Note 132:** *Ibid.*, 300-301.

**Note 133:** William T. Rowe, *Saving the World: Chen Hongmou and Elite Consciousness in Eighteenth-Century China* (Stanford, Calif.: Stanford University Press, 2001).

**Note 134:** For the copper mining industry in Yunnan and the Qing administration, see Wu Qirui (Qing), *Diannan Kuangchan Tulue* (An illustration of the copper mining in Yunnan) (Shanghai: Gujichubanshe, 1995); Wang Chang (Qing), *Tongzheng Bianlan* (A concise introduction to the copper administration) (Taipei: Xueshengshuju, 1986); Ruan Yuan, *Yunnan Tongzhi, juan* 74-77; Tuojin, ed., *Qinding Daqing Huidian Shili* (The statutes of the grand Qing), *Zhongguojindaishi Shiliaocongkan Sanbian* (Taipei: Wenhai Chubanshe), Vol. 66, *juan* 173-176, 7881-8183; He Changling, ed., *Qing Jingshi Wenbian* (State-craft works in the Qing Dynasty) (Beijing: Zhonghua Shuju), 3 vols., *juan* 52-53, 1275-1340; Xi Yufu and Shen Shixu, eds., *Huangchao Zhengdian Leizuan* (A classified compendium of the administrative statutes of the Qing Dynasty) (Taipei: Wehhai Chubanshe), *Jindai Zhongguo Shiliao Congkan Xubian* (The continuation for modern Chinese history source series)

(Taipei: Wenhai, 1982), Vol. 88, *juan* 162-167, 107-250; Yan Zhongping, *Qingdai Yunnan Tongzheng Kao* (A study on Yunnan copper administration in the Qing Dynasty) (Beijing: Zhonghua Shuju, 1957); E-Tu Zen Sun, "The Transportation of Yunnan Copper to Peking in the Ch'ing Period," *Journal of Oriental Studies* IX (1971): 132-148; Quan Hansheng, "Qingdai Yunnan Tongkuang Gongye" (The copper mining industry in Yunnan during the Qing Dynasty), *Journal of the Institute of Chinese Studies of the University of Hong Kong* 7, no. 1 (1974): 155-182; Anna See Ping Leon Shulman, "Copper, Copper Cash, and Government Controls in Ch'ing China (1644-1795)," dissertation, University of Maryland College Park, 1989.

**Note 135:** *Yuan Shi*, *juan* 94, in *YNSLCK* 2:647.

**Note 136:** Cai Yurong, "Choudian Disishu," in *YNSLCK* 8: 428.

**Note 137:** *Ibid.*

**Note 138:** *Ibid.*

**Note 139:** *Ibid.*

**Note 140:** *Yunnan Tongzhi*, *juan* 76, in *YNSLCK* 12: 655-656; Yan Zhongping 1957, 6.

**Note 141:** This paragraph is a summary of Yan Zhongping 1957, 6-7.

**Note 142:** Yan Zhongping 1957, 8.

**Note 143:** For example, see John Robert Shepherd's Taiwan frontier. Shepherd 1993.

**Note 144:** For discussions of this system, see Hans Ulrich Vogel, "Chinese Central Monetary Policy, 1644-1800," *Late Imperial China* 8, no. 2, 1987, 1-52.

**Note 145:** *Ibid.*, 3.

**Note 146:** *Ibid.*, 10.

**Note 147:** Vogel 1987, 10.

**Note 148:** John Hall, "Notes on the Early Ch'ing Copper Trade with Japan," *Harvard Journal of Asiatic Studies* 12, nos. 3 and 4 (Dec., 1949), 445; Shulman 1989, 150.

**Note 149:** For the early Qing's effort to procure Japanese copper, see John Hall 1949, 444-461; Shulman 1989, 147-215.

**Note 150:** For Chinese merchants of Japanese copper, see Helen Dunstan, "Safely Supplying with the Devil: The Qing State and Its Merchant Suppliers of Copper," *Late Imperial China*, 13, no. 2 (1992): 42-81.

**Note 151:** Shulman 1989, 155. The English merchants then sold copper to India, where it was minted.

**Note 152:** John Hall 1949, 455.

**Note 153:** John Hall 1949, 453-454.

**Note 154:** John Hall 1949, 451-452.

**Note 155:** *Ibid.*, 452.

**Note 156:** Xi Yufu and Shen Shixu, *juan* 165, 191.

**Note 157:** Tuo Jin ed., *Qinding Daqing Huidian Shili*, *juan* 173, 7907.

**Note 158:** *Huangchao Jingshi Wenbian* 53: 59a-59b; John Hall 1949, 452.

**Note 159:** Cf. John Hall 1949, 452.

**Note 160:** Shulman 1989, 167-169; John Hall 1949, 455.

**Note 161:** For the debate and the Qing's response, see Shulman 169-172.

**Note 162:** Yan Zhongping 1957, 4; In 1716, the Qing assigned the eight provinces (Jiangsu, Zhejiang, Anhui, Jiangxi, Hunan, Hubei, Fujian, and Guangdong) to be in charge of copper supply; however, the other six provinces also relied on Jiangsu and Zhejiang, an indication of the exhaustion of domestic copper supply. In 1721, the two provinces were ordered to take over the responsibility of others. For the complicated story, see Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 655-660.

**Note 163:** Yan Zhongping 1957, 4.

**Note 164:** Yan Zhongping 1957, 4.

**Note 165:** *Qing Shi Gao*, *juan 124*, 659. The Qianlong emperor decreed that only officials of rank 3 or higher could use copper wares; soon it was ruled that only rank 1 officials were allowed.

**Note 166:** Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 656; Yan Zhongping 1957, 8.

**Note 167:** Ruan Yuan, *Yunnan Tongzhi*, *juan 74*. Copper taxation was an index to judge the achievement of local officials so that they tended to overtax miners.

**Note 168:** Yan Zhongping 1957, 8.

**Note 169:** *Ibid.*, 4

**Note 170:** *Ibid.*

**Note 171:** *Ibid.*, 11.

**Note 172:** *Ibid.*

**Note 173:** Yan Zhongping 1957, 11-12.

**Note 174:** Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 656-657; Yan Zhongping 1957, 12.

**Note 175:** *Ibid.*

**Note 176:** Yan Zhongping 1957, 12.

**Note 177:** For the difficulty of shipping copper coins, see "Zhang Yunsui Zougao," in *YNSLCK 8*: 569-570; for the details, see Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 657-659.

**Note 178:** Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 658; Yan Zhongping 1957, 12-13.

**Note 179:** Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 658; Yan Zhongping 1957, 13. Japanese copper was still imported for local minting. See Mugong Taiyan (Kinomiya Yasuhiko), *Nissik otsushi*, trans. Hu Jinnian, *Zhongri Wenhua Jiaoliushi* (History of Sino-Japanese cultural exchanges) (Beijing: Shangwu Chubanshe, 1980), 680-681.

**Note 180:** For the regulations, see Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 660; Yan Zhongping 1957, 13.

**Note 181:** "Zhang Yunsui Zougao," in *YNSLCK 8*: 571.

**Note 182:** Ni Tui 1992, 571.

**Note 183:** *Ibid.*, 541-543; 571.

**Note 184:** *Ibid.*, 570-571.

**Note 185:** Yan Zhongping 1957, 14-15.

**Note 186:** Vogel 1987, 15.

**Note 187:** *Ibid.*

**Note 188:** Yan Zhongping 1957, 17-18.

**Note 189:** *Ibid.*, 19.

**Note 190:** Yan Zhongping 1957, 25.

**Note 191:** *Ibid.*, 25.

**Note 192:** Ruan Yuan, *Yunnan Tongzhi*, *juan 76*, in *YNSLCK 12*: 659-660; "Zhang Yunsui Zougao," in *YNSLCK 8*: 574-579.

**Note 193:** Wu Qirui, *juan 1, kao 6*; Yan Zhongping 1957, 27-28.

**Note 194:** Yan Zhongping 1957, 28.

**Note 195:** *Ibid.*; Shulman 1989, 51.

**Note 196:** Wang Taipeng, when examining the Kongsí government in West Borneo that had shaped overseas Chinese in Southeast Asia for one and half centuries, traced its origins to Yunnan mining organizations in the Qing, and even in the Ming period. In this sense, Yunnan contributed to modern Southeast Asian history. See Wang Taipeng, *The Origins of Chinese Gongsí* (Selangor Darul Ehsan: Pelanduk Publications, 1994), 9-22.

**Note 197:** Wu Qirui, *juan 1, nu 4*.

**Note 198:** Wu Qirui, *juan 1, yi 10*, Yan Zhongping 1957, 66-67.

**Note 199:** Yang Zhongping, 66.

**Note 200:** Yan Zhongping 1957, 37-39.

**Note 201:** *Ibid.*, 37-38.

**Note 202:** *Ibid.*, 38.

**Note 203:** *Ibid.*

**Note 204:** *Ibid.*, 40.

**Note 205:** *Ibid.*

**Note 206:** *Ibid.*, 43.

**Note 207:** Pomeranz 1993.

**Note 208:** Paul Smith 1991.

**Note 209:** William Skinner, "Introduction: Urban Development in Imperial China," *The City in Late Imperial China*, ed. G. William Skinner (Taipei: Rainbow-Bridge, 1983), 8.

**Note 210:** Barbara Sands and Ramon H. Myers, "The Spatial Approach to Chinese History: A Test," *Journal of Asian Studies* XLV, no. 4 (1986): 737.

**Note 211:** Cao Shuji, "Qingdai Beifang Chengshi Renkou Yanjiu" (Studies on urban populations in Northern Qing China), *Zhongguo Renkou Kexue* 4 (2001): 15-28.

**Note 212:** Chiranan Prasertkul 1989.

**Note 213:** William Skinner, "Regional Urbanization in 19th Century China," in *The City in Late Imperial China*, ed. G. William Skinner (Taipei: Rainbow-Bridge, 1983), 235.

**Note 214:** James Lee 1982, 300-301.

**Note 215:** *Ibid.*, 742.

**Note 216:** Skinner 1983b, 241.

**Note 217:** William Skinner, "Cities and the Hierarchy in Local systems," *The City in Late Imperial China*, ed. G. William Skinner (Taipei: Rainbow-Bridge, 1983), 346.

**Note 218:** Carolyn Cartier, "Origins and Evolution of a Geographical Idea," *Modern China* 28, no. 1 (2002): 81.

**Note 219:** Hans Ulrich Vogel 1987, 7.

**Note 220:** *Ibid.*

**Note 221:** Thomas Hall 1989.