

Remarks on *Wuliao jiazhi zeli*, the Price and Wage Regulations in Public Construction, issued by the Ministry of Public Works (1769-1796)

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The price, wage and transport regulations for public construction included in the *Wuliao jiazhi zeli* (“Regulations and precedents on the prices of materials”) is arguably the most systematic and comprehensive source on prices and wages of a major economic sector during the Qing dynasty (1644-1911). It contains prices and wages for building materials, such as timber, stone, bricks, lime, earth, scaffolding, painting, and other ornamental materials, as well as the wages for skilled and unskilled artisans in the buildings crafts, and transport costs for the greatest part of the Qing territory and administrative divisions down to district level. The work was presented to the emperor with a memorial that is dated 1769. Although later amendments exist and it does not only represent prices and wages of the year 1769, but rather of a certain time range that might extend back as far as thirty years, we refer to it as the “1769” series.

Intention, compilation process, and structure

Under the Qing dynasty, the Chinese state bureaucracy had reached its highest level of organization and the greatest volume of internal communication. The eighteenth-century documents of the central government show the most active participation of the Yongzheng (reg. 1723-1735) and Qianlong (reg. 1736-1795) emperors in all bureaucratic processes. A great number of economic data were collected, and for the areas in which the state was actively engaged, regulations were established. In the case of public construction, before building projects could be realized, cost estimates had to be submitted to the central government, either to the Ministry of Public Works or directly to the emperor, depending on the scope and importance of the project. The estimates were checked in the Ministry for factual correctness on the basis of price and wage regulations that had been previously negotiated. The earliest extant example of such regulations is *Jiuqing yiding wuliao jiazhi* “Prices of materials decided by the Nine Ministers” (1736).¹ These prices, wages, and transport costs were intended for constructions in the capital and for the central government.

¹ For more details on this work, see Song Jianze and Christine Moll-Murata, “Notes on Qing Dynasty ‘Handicraft Regulations and Precedents’ (*jiangzuo zeli*)”, pp. 91-93.

However, there were no similar regulations for the provinces. Construction projects here were based on “established cases” (*cheng'an* 成案), that means precedent cases on which the costs for subsequent projects were based. The eminent field administrator Chen Hongmou (1696–1771) in 1761 initiated the effort of establishing regulations for every administrative division in all provinces down to the district level. Since Chen was a supporter of state procurement at market prices,² he had market prices investigated and submitted to the ministry in statistical lists. These lists are referred as “the lists recently submitted” or “the present lists” (*xian song ce* 現送冊, *jin ce* 今冊). In 1765, all provinces had sent in their statistics.³ These were compared with the “established cases”, negotiated among the ministry officials, and fixed. The provincial governors were ordered to abide to these data when they requested funds for construction projects.

The “finished compilation” was presented to the emperor in 220 chapters. It covered 1,557 administrative units. However, such a work has not been found to date. What exists today are regulations that were published separately in most provinces of the Qing empire. We have so far located 15 editions which cover more than 900 districts and sub-prefectures.⁴ Among these, at least two are later amendments. The whereabouts of the complete 220 chapter edition are still unclear.

Profile of the wage data

The wage data are not specified in great detail. For every administrative division, they typically follow after a set of prices for 30 to 100 building materials and precede a section on transport prices. The most basic consists of wages for master artisans, *jiang* 匠, are expressed in the unit “workday” 工, those for unskilled helpers or labourers *fu* 夫 per person *ming* 名. The calculatory unit “workday” is regularly used in technical descriptions for a wide range of production, and indicated in multiples or fractions. We also find indications that for apprentices in their first year three days count as one “workday,” for those in the second year,

² Rowe, William T., *Saving the World*, p. 207.

³ [*Zhili sheng*] *Wuliao jiazhi zeli* j. 1, fol. 4b.

⁴ Zhili 139, Yunnan 72, Fujian 10 (prefectures), Gansu 71, Shanxi 95, Shaanxi 76, Sichuan 48, Jiangsu 66, Guangdong 91, Zhejiang 74, Rehe 7, Shengjing 24, Shandong 51, Hunan 14, Henan 107.

one day counts as a half “workday.”⁵ There are few instances where further specialization of wage payment is indicated. Most common is an extra entry for earth pounders *hangwo fu* 夯硪夫, which are not counted as master artisans, but receive slightly higher wages than unskilled labourers. The most specified wages are given in Zhili, where we also find wages for master sawyers⁶, carpenters, stonemasons, paint-makers and painters, tailors, plasterers, canopy makers, paperhangers⁷, labourers who drove in wooden pillars as foundations of buildings, and cleaners⁸. Except these, in Shaanxi we find master ironsmiths, lacquerers, scaffolders, and plasterers.⁹ Labourers are sometimes divided into unspecified and sturdy labourers¹⁰, and in Henan, “small labourers” are mentioned. This might refer to children or very young labourers, or to minor jobs¹¹. Work soldiers occur in the Shengjing edition for Heilongjiang.¹²

Amendments

The format of the „1769“ editions is more or less homogenous. The introductory material, which consists of two memorials, the editorial principles, and general remarks, are the same in the Zhili, Henan, Gansu, Shaanxi, Shanxi, Shandong, Jiangsu, Zhejiang, and Guangdong editions. Neither of these editions comments on specific regional conditions. Hunan, a manuscript fragment, and Shengjing have no prefaces. The Sichuan and Rehe editions have evidently been compiled at a later date, and the date of the Fujian edition remains unresolved. Since these last three editions all carry prefatory memorials, a separate discussion seems in place.

⁵ *Zongguan nei wufu xianxing zeli. Guangchu si* 總管內務府現行則例. 廣儲司 (Current regulations and precedents of the Imperial Household Department. Storage Office), Jiaqing (1796–1820), ms, reprint *Shiliao congkan* 86, No. 853, p. 42

⁶ *jujiang* 鋸匠, [*Zhili sheng*] *Wuliao jiazhi zeli*, chap. 3, fol. 29a

⁷ *mu, shi, you, hua, caifeng, wa, peng, biao jiang* 木, 石, 油, 畫, 裁縫, 瓦, 棚, 裱, [*Zhili sheng*] *Wuliao jiazhi zeli*, chap. 15, fol. 48b

⁸ *xia chun wofu* 下椿硪夫 and cleaners *saofu* 掃夫, [*Zhili sheng*] *Wuliao jiazhi zeli*, chap. 20, fol. 23a

⁹ *tie jiang* 鐵匠, [*Shaanxi sheng*] *Wuliao jiazhi zeli*, chap. 1, fol. 43a, *qi jiang* 漆匠, op. cit., chap. 2, fol. 35a, *dacai jiang* 搭採匠, op. cit., chap. 6, fol. 12b, *shuini jiang* 泥水匠, op. cit., chap. 9, fol. 14b

¹⁰ *zhuang fu* 壯夫, [*Zhili sheng*] *wuliao jiazhi zeli*, chap. 12, fol. 11a

¹¹ *xiao fu* 小夫, [*Henan sheng*] *wuliao jiazhi zeli*, chap. 6, fol. 22b

¹² *bingfu* 兵夫, [*Shengjing*] *wuliao jiazhi zeli*, chap. 5, Heilongjiang fol. 7b-8a

The Sichuan edition

Sichuan Xinjiang getun wuliao jiangfu jiazhi zeli 四川新疆各屯物料匠夫價值則例

(Regulations and precedents on prices for materials and wages for artisans and labourers in Sichuan and the military colonies on the New Borders), differs in its title designation and structure from the other editions. Before the part that is comparable to the earlier editions, a more general part is included. It is not stated as clearly as in the usual “1769” regulations which specific regions this refers to, but from place names occurring interspersed in the text, we see it covers the military colonies in the Big Gold-River (Da Jinchuan) and Small Gold-River (Xiao Jinchuan) regions, the “Wild West” of Sichuan province. In 1770 and 1773, non-Han Chinese ethnic groups had rebelled here. They were finally subjugated to the Qing rule in 1776.¹³

A prefatory memorial, dated 1792, emphasizes that Sichuan and its new military colonies did not have price and wage regulations like those of 1769. From the viewpoint of the Ministry of Works, the prices and wages in the Sichuan military colonies that had been submitted for reimbursement were too high¹⁴. One important purpose for setting up these regulations was to lower the regulated prices and wages and adjust them to the prices and wages in the nearest regions of inland Sichuan.

Confusingly, the designation “New Borders” is the same as that for the present-day Xinjiang province, which was officially established in 1884. But wages in present-day Xinjiang province are only mentioned once in the Sichuan edition. The wages in the military command Urumchi, which at 0.2 silver tael per workday the highest the government would pay, together with those at the military outposts of Manchuria, Baidu’ne in Jilin and Qiqihaer, Hulan, and Mo’ergen cheng in Heilongjiang.¹⁵

The “New Borders” of Sichuan province are rarely referred to as Xinjiang. Our thanks to Ulrich Theobald who showed us a text passage where this is the case: After the expeditions to the Big and Small Gold River regions were finished in 1776, a memorial suggests to withdraw the Qing troops, and only 6000 men should remain “at the New Borders”.¹⁶

¹³ Arthur W. Hummel (ed.), *Eminent Chinese of the Ch’ing Period*, vol. 1, pp. 7-8 (sub A-kuei), “The conquest of Ta Chin-ch’uan was completed after five years of fighting and at the expenditure of seventy million taels of silver – more than twice the sum consumed in the conquest of the Ili valley and Turkestan, although the latter comprised an area twenty times that of Chin-ch’uan. [...] The conquered territory was re-peopled with loyal tribesmen and military colonists, and did not cause trouble again.”

¹⁴ *Sichuan Xinjiang getun wuliao jiangfu jiazhi zeli*, fol. 4b

¹⁵ *Sichuan Xinjiang getun wuliao jiangfu jiazhi zeli*, chap. 1, fol. 13a. For Manchuria, see *Shengjing wuliao jiazhi zeli*, chap. 4, fol. Baidu’ne 8b, chap. 5, fol. Heilongjiang 7b-8a, Qiqihaer 6b-7a, Hulan 6a-6b, Mo’ergen cheng 7a

¹⁶ *Pingding liang Jinchuan fanglue* (Strategies for pacifying the two Jinchuan regions), chap. 133, p. 1626, Qianlong 41 (1776), IInd month.

The Rehe edition

Rehe (Jehol) or Chengde had been conquered by the Manchus in the seventeenth century and had become an imperial pastureland. It is a vast complex of palaces and administrative and ceremonial buildings. The city was the site of important imperial summer palaces that had been built between 1703 and 1792. In the regulations it is treated as a prefecture that belonged to Zhili province, but three of its districts in this edition overlap with the territory of the Six Mongolian Leagues Tribes. Thus, Jianchang and Chaoyang concurrently belong to the jurisdiction of the Josutu/Zhuosuotu league, and Chifeng to the Juuda/Zhaowuda league.¹⁷

The introductory memorial of these regulations is dated Jan. 22, 1796 (Qianlong 60/XII/13). It states that the building regulations for the seven Rehe subprefectures belonging to Zhili, the subprefecture Dihua subordinate to Urumchi, and the subjugated, previously Mongolian regions in Shanxi were submitted herewith. However, the edition in the Oriental Library in Tokyo only contains data on Rehe prefecture. We also learn from the memorial that the Urumchi Military Commander Bayanbi in 1772 had submitted price and wage lists for Dihua zhou. These were sent to the Governor-General of Shaanxi and Gansu, who submitted them in a memorial. This again shows that matters of civil concern were not handled by military leaders, but managed by the highest civil authorities of the neighbouring provinces. The Urumchi regulations were printed and distributed, but after some time, the economic situation had changed considerably. The memorial states that the previous Military Commander [of Urumchi], Yimian 宜綿 (d. 1812) had submitted a memorial saying „When the region Xinjiang was first opened up, materials and manpower were extremely expensive. Now nearly twenty years have passed since (the Qing administrative system with) districts and prefectures was established, the number of households is daily increasing, and we have a situation that all commodities that weren't existing previously are here now; some were scarce before and are now abundant, and their price not only decreased, but even decreased by multiples. Therefore the previous regulations can't be followed any longer, and we should apply the actual timely prices and realistically adjust the regulations.”

As we have seen, the Rehe regulations were set up after nearly a century of continuous building activities. The Rehe imperial villas and temples belong to the world cultural inheritance protected by the Unesco and show the highest level of Qing craftsmanship. That these building activities had been accounted for already before the establishment of the

¹⁷ *Zhongguo lishi ditu ji* (Historical Atlas of China), vol. 8 (Qing dynasty), pp. 7-8 (Zhili), 57-58 (Inner Mongolian Leagues), introduction Nos. 15-16; cf. also Uradyn E. Bulag, “From Yeke-juu league to Ordos municipality” pp. 196-236, on Chifeng/Ulaanhad (p. 206), and http://en.wikipedia.org/wiki/League_%28Inner_Mongolia%29_leagues on the Mongolian names and Chinese transcriptions.

regulations is reflected in the fact that here a diachronic factor is expressed. The regulations not only give the wages, but specify wages in previous “established cases,” juxtaposing these with the actual lists *jin ce* presented to the Ministry of Public Works as raw material for the reimbursement, and the result of the ministerial deliberations, the fixed wages *hejia*. The trend is that the wages in the “established cases” are those which eventually appear as “fixed wages,” while those in the “actual lists” are higher.

Efficiency and reliability of wage regulations

As yet, we have no evidence how the 1769 wage regulations were realized in everyday routine. The intention of their originator Chen Hongmou was complete coverage of all Qing administrative units, but a work in this scope has not yet been detected so far. Among the extant editions, the geographical coverage varies. The Zhili edition, the region nearest to the capital and the central government, is the most complete set. The Fujian edition, which only has data for prefectures, seems like an abridgement that barely takes the original intention of closely reflecting the market situation – at least at the lowest market activity – into consideration. The Jiangsu, Gansu, and Shanxi editions tend to combine data for several districts in one heading. In the Sichuan edition, the treatment of the prefectures is uneven, and by far not all administrative units are covered. Thus, the question seems obvious: Were these wages investigated on a free labour market? In view of the uniformity in some provinces, e.g. Jiangsu, Zhejiang, and Fujian, we can hardly imagine that this was the case. But on the other hand, considerable variations among the provinces exist. Thus, we may assume that these wage norms reflect a trend to adjustment to the market situation. Recent research has emphasized the fact that the prices in the 1769 regulations, especially for timber, most probably do not correspond to market prices.¹⁸ Chen Chaoyong has pointed out that in consideration of the prices given in the established cases and in the lists that were sent in to the Ministry as raw material for the regulations, it was always the lowest possible price that was fixed, even when the actual prices clearly had increased (*fuduo* 浮多). The increase was simply not taken into account, but was frequently reported in the regulations. The only clue that this was also the case for wages is in the Rehe edition, where the figures of the wages according to established cases and presently submitted statistic materials and eventually the fixed wages are given. In the other editions, the formula “Concerning the above items bricks

¹⁸ Chen Chaoyong, “Qianlong chao *Wuliao jiazhi zeli zhong de wujia he gongjia*” (On Prices of Building Materials and Wages in Public Construction in *Wuliao jiazhi zeli*, 1769), p. 329

and tiles, lime, earth, miscellaneous materials, colours, and the wages for masters and labourers, we have all listed them according to the silver prices in the established fixed regulations and co-ordinated them with the prices that were presently sent in given by the respective regions” is in most cases repeated after the entries on wages. Fluctuation was tolerated or even called for only in cases when prices decreased, as in Urumchi.

However, at least from the point of view of the Ministry and the provincial administration, there is conclusive evidence that the regulations were deemed important; otherwise, amendments for the border provinces would not have been compiled. Moreover, the Jiangsu edition is reported to have been reprinted in the Daoguang era (1820-1851).¹⁹ If official use was still made of the 1769 regulations more than 50 years after they were first issued, and if many of the prices regulations actually reflect the situation of the “established cases” from the previous 30 years, then this would either reflect a very stable price and wage situation or it could be taken as a symptom of declining administrative efficiency and failure to adjust the regulations to the actual situation.²⁰

Food provisions or monetary wages?

In the course of this investigation, the question has been raised whether Chinese wages generally were monetary wages or whether the artisans and labourers received additional food and drink provisions that might not appear in public or private accounting. For the public sector, it seems unlikely that any provisions were given tacitly without being accounted for. In the Peking palaces, for instance, the employed Han-Chinese workers were either engaged on a long-term basis as “provision artisans” (*shixiang jiang* 食餉匠, *shiliang jiang* 食糧匠) or as temporarily hired artisans *zhaomu jiang* 招募匠 who received monetary wages only.²¹ In the 1769 editions and its amendments, provisions are rarely mentioned. They are discussed at length in the part on wages in military colonies in Sichuan and Xinjiang and occur in the case of the work soldiers in Heilongjiang in the Shengjing edition as well as in Balikpapan in the

¹⁹ Sheng Jun, “Qing Qianlong chao Jiangsu sheng wujia gongzi tongji” (Statistics on the prices and wages in Jiangsu province in the Qianlong era), p. 108

²⁰ The ways of creative book-keeping used by dyke-building officials in the early nineteenth century are described in recent research on regulations for dyke-building, see Iwo Amelung, “Preliminary Observations on ‘Regulations and Precedents for River Works’ (*Hegong zeli*)”, p. 287. However, prices seem to have been more acutely problematic than wages.

²¹ Zhu Cishou, *Zhongguo gudai gongye shi* (A history of traditional Chinese industries), pp. 793-794. A typical example of these different modes of payment is that of the Imperial country palace Yuanming yuan outside Peking.

Gansu edition. Another example can be found in the Regulations on Military equipment,²² where daily wages for tailors from the garrisons were 0.021 silver tael, but those for tailors engaged from outside with 0.050. The whole or part of this difference certainly were food provisions. Finally, and more concretely concerning the 1769 series, Sheng Jun has also argued for the Jiangsu edition that the monetary wages expressed here must contain an allowance for provisions, because it is not as convenient for the authorities as it is for private enterprises to feed the workers on the site.²³

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²² *Qinding gongbu junqi zeli* 欽定工部軍器則例 (Imperially endorsed regulations and precedents on weapons and military equipment by the Ministry of Public Works), 1813, chap. 56, fol. 32a.

²³ Sheng Jun, op. cit. p. 123

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