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Abstract

This study attempts to reconstruct the GDP of the Lower Yangzi Delta in the beginning of the nineteenth century. It is part of a cooperative research project carried out by myself and Jan Luiten van Zanden. We have applied the same methods, standards, and measures to reconstruct the economies of the Netherlands and the Lower Yangzi Delta in the said period and then compared them. The result of my five years of work came out in my recent Chinese book (see Li 2010). This paper summarily presents my findings in English.

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The Issue

One of the central themes in studies of Chinese economic history is China's real economic situation before the arrival of the modern West in the mid-nineteenth century. Views on this theme are highly divergent in previous scholarship. At one extreme, some scholars assert that the Chinese economy had fallen into unending and ever-deepening "involution" well before the mid-nineteenth century. At another extreme, other scholars hold that the Chinese economy had performed so well that an indigenous capitalism, or "Chinese capitalist sprouts," had been well under way in the late imperial period. This debate has been going on for nearly a century but is far from over; just the contrary, it is intensified by the recent row regarding the claim of a "Great Divergence" between China and Europe around 1800 and will surely continue to be a focus of scholarly discourse about China for a long time (Pomeranz 2000).

As the most economically advanced area of China in the past millennium, the Yangzi Delta, or the "Jiangnan 江南area" as it is called in traditional Chinese literature, has held a special role in Chinese economic history and has been under the most intensive study in the past century. Thanks to generations of scholarship and effort, we now have a much better knowledge of the economy of this area than of any other part of China. Many influential explanations of the Chinese narrative have been drawn from the experience of this area.

Yet, there are obvious shortcomings in the previous scholarship. The most serious one, it seems to me, is that our understanding of the delta's economy prior to the turn of the twentieth century remains quite fragmented. We know much about particular aspects of the economy, say, agriculture, rural industry, commerce, trade, land tenancy, taxation, and others, but we do not know much about how all these aspects were connected and what the economy as a whole really looked like at that time.

Moreover, almost everybody agrees that a comparative approach is crucial to economic history. It is, however, difficult to make meaningful comparisons because of the complex

issues of comparability and incomparability between economies. To make the comparisons reasonable, a set of standards and indicators that can be equally applicable to both economies under comparison is indispensable. Otherwise, we may fall into the trap of some kind of "-centrism"—for instance, Euro-centrism, Sino-centrism, and so on—all of which are equally detrimental. In light of this, it is unfortunate that in most of the previous studies comparing the economic histories of China and the West, common standards and indicators were not carefully built into their analytical framework. As a result, many were flawed with subjective judgments and arbitrary comparison.

This study aims to provide a relatively complete and concise description of the economy of the Lower Yangzi Delta in the early nineteenth century from a comparative perspective. In this study, I focus on the Huating-Lou area around the period from 1823 to 1829. My intention is to experiment with comparative methodology through a selected focus on the Huating-Lou area first. In the future, the same approach will be applied to the study of a larger region and for a longer period.

The Area and Period

Geographically, the Huating華亭-Lou 婁area roughly corresponds to modern Songjiang County in Shanghai Municipality. After 1725, this area was divided by the Qing government into the two counties of Huating and Lou under the jurisdiction of Songjiang 松江Prefecture. Three administrative units, one prefectural and two subprefectural (Songjiang Prefecture, Huating County, and Lou County), shared the same city as their capital administration seat. The area of Huating-Lou, which was about 600 square kilometers in the 1930s, had not changed much during the two centuries between 1725 and 1949.

The population of the Huating-Lou area was reported as 563,052 in 1816. Since there are no statistics available for the 1823–29 population, I use the 1816 figure as the proxy.

Accordingly, the density of the population of the area from 1823 to 1829 was above 900 people per square kilometer, which made this area rank among the most populous areas in China as well as the world of the day. As the heart of Songjiang Prefecture, the Huating-Lou area had a very important place in the Chinese economy because it had been the center of the Chinese textile industry for centuries.

The period under study, 1823 to 1829, was the beginning of a great climatic change that raged over eastern China for half a century. The chief landmarks of the change are the floods of 1823 and 1829 (Li 2007). The period is also the beginning of the century-long decline of the economy in most parts of China. Before then, China had enjoyed prolonged economic prosperity, but after then, in stark contrast, its economy performed extremely poorly. The turning point is around 1820, which is seen as the beginning of the Great Depression (Wu Chengming 2001: 241).

In short, 1823 through 1829 were the first years of the century-long climatic and economic deterioration in this selected area of the Lower Yangzi Delta, and in China at large.

Sources

Significance aside, a good reason that the area of Huating-Lou and the years 1823 through 1829 were chosen for this study is that good data regarding this time and place are available, allowing us to conduct a GDP study in the premodern Chinese context. Being one of the most economically and culturally accomplished areas of China, Huating-Lou has abundant local literature of the past, which contains valuable information on the local economy dating to the beginning of the nineteenth century and beyond.

An important feature of this study is that it makes use of a wide range of materials from many different kinds of sources. I have relied principally on three types of materials: local histories or gazetteers, agricultural handbooks, and modern field investigations.

1. Gazetteers

Chinese tradition long has it that each province, prefecture, and county, and even township or village in many cases, keeps a record of events and data considered significant. Compared with gazetteers compiled in most parts of China, the quality of the gazetteers of Songjiang Prefecture and Huating and Lou Counties are of very high standard. These gazetteers contain abundant information on the local economy during the late eighteenth and most of the nineteenth century.[1] In addition, information on the Huating-Lou area is also kept in gazetteers of the neighboring areas.

2. Agricultural Handbooks

In the premodern Huating-Lou society, many scholars had strong interests in local affairs, including economic situations. They recorded their observations in their writings, which are very useful to our study. Of these writings, the most important are "agricultural handbooks," which deal directly with agriculture—not only farming practices, but also other aspects of the rural economy.

The most valuable source of the materials crucial to this study is an agricultural handbook titled *Pumao nongzi* 浦泖農諮 (A report on agriculture in the Huangpu River and Mao Lake area) dated 1834, which carries rich and firsthand information on the rural economy of the Huating-Lou area from 1823 through 1834, with a considerable amount of quantitative data.

[1] We have consulted seven local gazetteers of the area in question: *Jiaqing Songjiang fu zhi* 嘉慶松江府志 (1818), *Guangxu Songjiang fu xuzhi* 光緒松江府續志 (1884), *Qianlong Huating xian zhi* 乾隆華亭縣志 (1791), *Guangxu Huating xian zhi* 光緒華亭縣志 (1879), *Qianlong Luo xian zhi* 乾隆婁縣志 (1788), *Guangxu Lou xian xu zhi* 光緒婁縣續志 (1879), and *Songjiang xian zhi* 松江縣志 (1991).

3. Modern Field Investigations

In the twentieth century, several modern field investigations were conducted in this area and neighboring areas, both by Chinese and by foreigners. The major results of the Chinese investigations that relate to this study are available in the 1991 edition of the *Songjiang xian zhi* and other twentieth-century gazetteers of the neighboring areas. Among the investigations carried out by foreigners, the surveys made by the Japanese South Manchurian Railway Company from 1937 to 1941 provide the most precise and detailed body of information available on the society and the economy of the Huating-Lou area in the first half of the twentieth century (Huang Zongzhi 1986: 38–42).

The data in these sources, however, are far from ideal for the purposes of this study. There are many key gaps in the materials, both quantitative and qualitative, and much of the information can also be questioned. To enhance the quality of the data, I have routinely verified the data for the period of the 1820s, looking at whether the data are consistent with those from materials of earlier and later periods, or from materials of neighboring areas, and with overall historical development in the intervening periods and local areas. I have also evaluated the data of the 1820s and modern times on the basis of their internal consistency, totally independent from the twentieth-century figures. For many issues, comparisons of the historical data with data of the 1930s, 1940s, and early 1950s are also crucial.

Methods

To achieve a more complete and comparable picture of the economy of the Huating-Lou area in the 1820s with the Netherlands case in mind, the GDP approach is very helpful. The approach has some advantages over other approaches. First, though the GDP analysis is only one method to measure the size of an economy, it surely provides us with a more complete picture of the economy. Second, because the methods of GDP studies are quite elaborate and

standardized, they can provide a coherent macroeconomic framework covering the whole economy. Third, since GDP methods are "universal" in some sense, they can be used widely and consistently, and there can be confidence that the same thing is being measured in each area and period.

This study is the first attempt to apply the methods of GDP studies to Chinese economic history prior to the twentieth century. The major methods used here are roughly what are used in measuring GDP today, which include the three major approaches: production, expenditure, and income. These approaches are all applied in this study, but the production approach is the major one.

There are some problems, however, when we try to apply these methods to a premodern economy. First, GDP is the market value of all final goods and services produced within a region in a given year. In a preindustrial economy, however, many activities are nonmarket, but they are still considered part of national income. Therefore, a value must be calculated even when the good or service has no actual market price.

Second and more significantly, no constant and reliable economic statistics are available for the area and period under study. There are many key gaps in the surviving materials, both quantitative and qualitative, and much of the information is not particularly reliable.

But, the two problems can be solved if we take note of the following facts. First, though the economy under study was still a preindustrial one, we cannot ignore the fact that by the early nineteenth century, a well developed market had become the hub of the economic activities in the area. Almost everything, including major product factors, could be (or had to be, in many cases) acquired from the market. For this reason, many important items of goods and services had market prices that were recorded in the *Pumao nongzi* and other literature.

Second, GDP methods have been used for years in the reconstruction of the GDP of the preindustrial Netherlands (van Zanden, Buyst, and Smits 1995). The methods are

comparatively mature in the construction of historical estimates. The experience of Dutch colleagues is very helpful to my study.

It must be made clear here, however, that all conclusions and statements in this study, as in any works on economic history, are an approximation only. No statement about the economic situation of an area two centuries ago can be made with absolute certainty, and conclusions in this study are tentative. This study is an attempt to open discussion on several important issues, not to conclude it.

Major Finding

Some findings are reached in this study, which, if they prove true, may shed important light on our knowledge of the Chinese economy before the mid-nineteenth century. Using the production approach, I have worked out the values added in major sectors of the Huating-Lou economy in the years 1823–29. From table 1, we can see that the GDP was around 13 million taels of silver per year.

The results I arrived at with the approaches of income and expenditure are in tables 2 and 3. Since the maximum difference of the three results is within 4 percent, we can conclude that the GDP of the Huating-Lou area per year from 1823 to 1829 was around 13,500 taels of silver. Because the population of the area was around 560,000, the GDP per capita was about 24 taels of silver.

I have also worked out estimates for employment. Its distribution by sector in the Huating-Lou area from 1823 to 1829 is in Table 4. The sectors are divided as primary, secondary, and tertiary following common practice in economics. Within the primary sector, there are two forms of employment, i.e., agriculture and fisheries; within the secondary sector: ordinary, textile, and manufacturing; whereas in the tertiary sector there are commerce, service, banking, external trade, water transportation, education, and government.

Table 1. Value Added, in the Huating-Lou Area, 1823–29

	Value Added (1,000 silver taels)	Percentage
Primary Sector		
agriculture	4,002	30
fisheries	166	1
total primary	4,168	31
Secondary Sector		
"ordinary"*	546	4
textile	1,270	9
"manufacturing"**	2,666	20
total secondary	4,482	33
Tertiary Sector		
commerce	1,727	13
service	277	2
finance	486	4
external trade	907	7
water transportation	251	2
education	358	3
government	843	6
total tertiary	4,849	36
GDP	13,500	100

Source: Li 2010: 247, table 12-1.
Note: 1 tael (*liang*兩) equals approximately 37.3 grams.
* The "ordinary" sectors include tailoring, hardware making, carpentry, plastering, and so on. ** The "manufacturing" sectors include rice husking, wine brewing, oil pressing, construction, salt making, boat building, brick and tile kilning, and so on.

Table 2. GDP (Income Approach) of the Huating-Lou Area, 1823–29

	Income (1,000 silver taels)	Percentage
Wage	8,271	61
Rent	1,468	11
Interest	366	3
Profit	2,670	20
Depreciation	759	6
GDP	13,534	100

Source: Li 2010: 251, table 12-4.

Table 3. GDP (Expenditure Approach) of the Huating-Lou Area, 1823–29

	Expenditure (1,000 silver *taels*)	Percentage
Private consumption	12,330	90
Government consumption	875	6
Fixed capital formation	759	6
Net export	-229	-2
GDP	13,744	100

Source: Li 2010: 250, table 12-3.

Table 4. The Structure of Employment in the Huating-Lou Area, 1823–29

	Employment (1,000 "full-time" adult workers)	Percentage
Primary Sector		
agriculture	68,000	26
fisheries	3,100	1
total primary	71,100	27
Secondary Sector		
"ordinary"	13,300	5
textile	113,000	43
"manufacturing"	22,200	8
total secondary	148,500	56
Tertiary Sector		
commerce	18,400	7
service	6,600	3
banking	5,000	2
external trade	1,200	2
water transportation	4,300	2
education	4,000	2
government	3,800	1
total tertiary	43,300	16
Total	262,900	100

Source: Li 2010: 219, table 9-7.

The volumes of the internal and external trade, the major exports, and the balance of payment in external trade are summarized in tables 5, 6, and 7. The volume of external trade accounts for 27 percent of GDP.

Table 5. Trade in the Huating-Lou Area, 1823–29

	Volume (1,000 silver taels)	Percentage
Urban-rural	5,020	45
External	3,670	33
Within rural areas and within urban areas	2,490	22
Total	11,180	100

Source: Li 2010: 425, table app. 10-7.

Table 6. Major Imports and Exports in the Huating-Lou Area, 1823–29

	Export volume (1,000 silver taels)	Import volume (1,000 silver taels)
Rice (husked)	42	0
Cotton cloth (blank)	1,432	0
Soybean	0	936
Raw cotton (ginned)	0	625
Salt	63	0
Total	1,537	1,561

Source: Li 2010: 423, table app. 10-6.

Table 7. Balance of Payment, in the Huating-Lou Area, 1823–29

	Volume (1,000 silver taels)
Import	2,110
Export	1,560
Total	3,670
Balance	-550

Source: Li 2010: 424.

From the three previous tables, we can observe the following. {joined paragraphs}First, agriculture accounted for only 30 percent of the economy of the Huating-Lou area from 1823 through 1829, both in terms of GDP and of labor force, while the shares of industry and services were considerably higher. This is sharply contrary to the perceived view that agriculture constituted the bulk of the Chinese premodern economy.

Second, land rent accounted only for one-eighth of national income in this area during the period under study. This calls into question the long-held view that this factor had been the most important component of national income, without exception, in premodern China.

Third, the volume of external trade accounts for 29 percent of the GDP. This result is much higher than previously thought by scholars. In addition, the urbanization of this area was also surprisingly high, reaching a level of 40 percent for the period. All these results challenge the conventional wisdom that the economy of this area before the mid-nineteenth century was still "agricultural." Moreover, we should note that this period was not a "normal" one in climatic and economic terms, and the GDP estimated is most likely to have been lower then than the periods prior to and after this particular period. As such, the added values of rice and cotton cloth that appear in the tables, the two top staple goods produced in this area,

should be more on the conservative side and may well be adjusted higher. In any event, the real GDP in this area should have been considerably higher in the first decade of the nineteenth century or in the last decades of the eighteenth century as compared to that in the years 1823 to 1829.

Comparisons with the Dutch Economy

Comparative studies have been considered crucial to our understanding of economic history of both China and the West for quite a while now. A more integrated view can illuminate both the exceptional situations and the normal ones; it produces better explanations for the rise and decline of different economies.

Most Chinese scholars have been taking the English pattern of early modern economic growth as the standard or even only model as they observe the case of China. Yet, it is now apparent that the early modern economic growth of the Lower Yangzi Delta may in fact have more similarities with that of the Netherlands than with that of England. Moreover, the two areas shared some other common features, in terms of location, population density, topography, and so on.

A study by Jan-Pieter Smiths, Edwin Holings, and Jan van Zanden has provided us with a clear picture of the Dutch GDP in the 1810s. The major results are summarized in Table 8. If we compare the economies of the Huating-Lou area in the 1820s and of the Netherlands in the 1810s, many significant similarities and differences can be found between them, as shown in tables 9 through 12.

Table 8. Value Added by Economic Branch in the Netherlands, 1807

	Value Added (millions of guilders)	Percentage
Primary Sector		
agriculture	119.3	24.3
fisheries	1.4	0.3
total primary	120.7	24.6
Secondary Sector		
mining	3.1	0.6
paper	1.0	0.2
foodstuffs	41.9	8.6
textiles	22.0	4.5
clothing	30.9	6.3
leather	10.0	2.0
chemicals	3.9	0.8
metal and engineering	4.3	0.9
shipbuilding	0.3	0.1
utilities	0.1	0.0
construction	16.9	3.5
other industries	8.2	1.7
total secondary	142.7	29.1
Tertiary Sector		
foreign trade	57.0	11.6
domestic trade	25.1	5.1
maritime shipping	0.8	0.2

international river shipping	2.4	0.5
inland navigation	30.8	6.3
other transportation	13.7	2.8
communication	0.9	0.2
banking	2.8	0.6
insurance	1.2	0.2
government	32.0	6.5
domestic servants	17.6	3.6
education	1.9	0.4
remaining services	8.0	1.6
catering	12.9	2.6
housing	19.7	4.0
total tertiary	226.9	46.3
GDP	490.3	100

Source: Smiths, Holings, and van Zanden 2000: table 4.5.

Table 9. Comparison of the Structure of GDP (%)

	Huating-Lou 1823–29	The Netherlands 1807
Primary sector	31	24.6
Secondary sector	33	29.1
Tertiary sector	36	46.3
Total	100	100

Source: Li 2010: 270, table 13-3.

Table 10. Comparison of the Structure of Employment (%)

	Huating-Lou 1823–29	The Netherlands 1807
Primary sector	27	42.7
Secondary sector	56	26.0
Tertiary sector	16	30.5
Total	100	100

Source: Li 2010: 271, table 13-4.

Table 11: Comparison of Urbanization (%)

	Huating-Lou 1823–29	The Netherlands 1815
Rural	60	65
Urban	39	35
city	27	17.5
township	13	17.5
Total	100	100

Source: Li 2010: 271, table 13-5.

Table 12. Comparison of National Income (%)

	Huating-Lou 1823–29	The Netherlands 1807
Wage	38.6	61
Capital income (interest and rent)	33.1	14
Profit	16.2	20
Depreciation	6.3	6
Indirect taxes	6.8	-
Total	100	100

Source: Li 2010: 274, table 13-8.

It is easy to see that the two economies in the early nineteenth century were quite similar to each other in the following aspects. First, agriculture accounted only for less than half of both GDP and labor force. In this sense, neither of the two economies can be regarded as a "traditional economy," which is defined as one dominated by agriculture. Second, the urban population accounted for more than one-third of the whole population. By any premodern standard, the two societies were quite urbanized.

Notwithstanding these similarities, important differences can also be seen in the comparison. The most important one is that the share of industry (the secondary sector) was higher in the Huating-Lou area than in the Netherlands (33 percent vs. 29 percent), whereas the share of services (tertiary sector) was much lower in Huating-Lou than in the Netherlands (36 percent vs. 46 percent). These differences reflect the realities of the two economies: the Huating-Lou area and its neighboring counties were the center of the flourishing cotton textile industry of China, which produced 60 percent of the cotton cloth in China's domestic long-

distance trade and foreign trade, whereas the Netherlands was the largest center of entrepôt trade of the European Continent by 1800, and trade took up a large part of the Dutch economy.

A Modern Economy?

There has not been a generally accepted definition of "modern economy." Here, I take a definition from the point of view of macroeconomic structure that may be the simplest: A "modern economy" is an economy in which industry and services supersede agriculture and become dominant, in contrast to the premodern economy, in which agriculture constitutes the major component.

De Vries and van der Woude, as is shown in the title of their coauthored book *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500–1815* (1997), argue that the Dutch economy had become a "modern economy" by 1815. If the economy of the Netherlands at the beginning of the nineteenth century can be seen as "the first modern economy" in the world, we can say that such a "modern economy" also existed in the Lower Yangzi Delta in general and the Huating-Lou area in particular.

Although this modern economy is definitely different from the modern economy that is commonly perceived, it is evident that some kind of "modernity" existed in the two types of "modern" economies—those of the Netherlands and Lower Yangzi Delta. The simultaneous coexistence of two modern economies at both ends of Eurasia reveals that economic "modernity" is not uniquely West European. Moreover, the economic modernity shared by the Netherlands and the Lower Yangzi Delta is significant for their later modern economic growth. Though lagging behind England, the levels of GDP per man-hour in the Netherlands remained among the highest in the world during most of the nineteenth century (Maddison 1991, 1995), whereas the levels of GDP per capita in the delta also remained the highest in

China and were among the highest in East Asia during most of the nineteenth century. This affirms that economic modernity not only existed in the two areas, but played a very important role in the actual long-term process of economic modernization in both economies.

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