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State Transformation, Reforms and Economic Performance in China, 1840–1910

Kent G. Deng

The period immediately after the Opium War (1840–42) marked the first stage of state transformation and economic reforms in modern China. During this period, the age-old socio-political and socio-economic structures and equilibria ended and new structures gradually took shape. Despite political hiccups, including the erosion of China's sovereignty, the market worked its own way out and modern growth began.

I. CHINA'S EARLY SUCCESS AND A CHANGE IN THE RULES OF THE GAME

a. China's superiority

China was a success story of pre-modern economic growth. Its socio-economic structure was flexible enough to expand across four time zones over 10,000,000 km^2, reaching the physical limits for an agrarian civilisation. Its economy was productive enough to generate the surplus to finance Confucian education, science and technology, a bureaucratic machine controlling over 1,000 counties, an army of one million men, gigantic public works (eg. the Great Wall and Grand Canal) and to sustain a remarkable degree of urbanisation, a nation-wide market and extensive foreign trade.

In terms of inventions and innovations, the Chinese almost certainly held the world record by the eve of the European Renaissance with a long list of claims including metallurgy, gunpowder, the compass, stirrups, silk, porcelain, paper making and paper currency, block printing, mechanical clocks, examinations to recruit civil servants, to name just a few.

China's production capacity was reflected by its export pattern. Until the end of the eighteenth century, China remained the main supplier of porcelain wares to the rest of the world.[1] Up to the end of the nineteenth century China was the main supplier of silk and tea to the world market. To facilitate foreign trade, by the end of the nineteenth century, China had over 10,000 compradors, with an aggregate wealth of 18,400 metric tons of silver, averaging 1.84 tons per head of the group.[2] Chinese diasporas spread far and widely in Asia long before the Europeans with sophisticated trading networks.[3]

China's wealth was crystallised by its possession of largest reserves of monetary silver in the world.[4] Having the large quantities of monetary silver for such a long period not only enabled China to establish a silver standard but also caused a price revolution.[5]

Behind its deliberately preserved extravagant and mighty façade, the 'Confucian state' was small and cheap with limited devices for and influence on the economy.[6] The functions of that state were to (1) promote Confucian values for social stability, (2) promote and regulate economic activities for tax revenue, (3) provide public goods: national defence and internal law and order, key infrastructure (such as the Grand Canal and public granaries) and emergency relief (against famine and violent price fluctuations). The underlying financial policy of the Chinese state was a balanced budget. The government revenue was merely 1–2 percent of China's total GDP.[7] Even so, the Qing suffered a chronic shortfall of 15 percent of its revenue target.[8]

Understandably, as China seemed to reach a Pareto optimum, the opportunity costs for a change in production function were too high. Until the nineteenth century, any such change could cost China's long-held supremacy.

b. A Change in the Rules of the Game

The conflict between the Qing state and the West occurred as the former struggled to maintain its grip on China's exports established in 1760. The corner-stone of this monopoly was the employment of 'chartered maritime merchants' at Canton. Huge sums were yielded for the Empire.

As China's door for trade was never closed but monopolised, the West had two hurdles to overcome: its own trade deficits and the Qing monopoly. It was a hopeless task until opium was discovered as an equaliser in trading with China. Soon, China's tea export was offset by opium instead of silver. Not only that, in 1817–19, for the first time, China had a trade deficit

with Britain–India. From then on, China's hard-earned silver began to flow out at a speed much faster than imports of the metal during the previous periods. The *Canton-Cohong* system tumbled as trade surpluses were no longer guaranteed.

The response of the Qing state was to ban the opium trade. It was a passive measure trying to stifle opium trade at home rather than enhancing China's monopolistic supply overseas. As Britain had too much to lose from the opium sales, the ban triggered the invasion of the British gun-ships.[9] The rules of the game were unilaterally changed by the West from peaceful market exchange (in which the West had comparative advantage) to armed confrontation (in which the West possessed *force majeure*).

The gamble paid off. In 1842, the Nanking Treaty was signed. Opium was legalised. The British had free access to China's market with their property rights protected. As the icing of the cake, China was also made to pay crippling reparations as a punishment for being a loser.[10] The two hurdles were cleared for good.

The benefit from the change of rules was so great that resorting to force to settle a dispute with China became the norm. Japan became addicted to it and waged more wars against China than all the other powers put together.

II. THE NANKING TREATY REFORM AND STATE TRANSFORMATION

Regardless of the brutality of the Opium War, a reform was swiftly carried out which can be called as the 'Nanking Treaty Reform' (NTR). Mercantilistic in nature, many changes took place and some were revolutionary.

First, China's jealously-guarded domestic markets were systematically opened up with 44 main ports for foreigners.[11] Foreign dominance in China's foreign trade and investment in railways became reality (Tables 1–3).

Table 1. Shares of Import and Export Tonnages, 1873–1910[12]

Year	Foreign (I)	Chinese (II)	I:II
1873	98%	2%	49.0
1882	73%	27%	2.7
1892	79%	21%	3.8

1902	83%	17%	4.9
1910	84%	16%	5.3
Mean	83.4%	16.6%	5.0

Table 2. Investment Shares in Railways, 1888–1946[13]

Sector	Total	Foreign (I)	Chinese (II)			I:II
				(Private)	(Government)	
No. Projects	90	76	14	(10)	(4)	5.4
% in total	100.0	84.5	15.5	(11.1)	(4.4)	
Sum*	1,398,235,438	1,078,932,172	319,303,266	(299,681,530)	(19,621,736)	3.4
% in Total	100.0	77.2	22.8	(21.4)	(1.4)	

Note: *Converted with period exchange rates.

Table 3. Foreign Control over Railways, *c*. 1918[14]

Powers	Length (in km)	% in Total
Western	13,980	88.6
Asian	1,792	11.4
Total	15,772*	100.0

Note: This is at least 90 percent of China's aggregate railway length.[15]

Second, the political control of the state began to crack as foreign spheres of influence functioned as alternative power centres. It was no accident that a decade after the Opium War rebellions such as the Taiping so seriously challenged the Qing rule that the Beijing government only survived with financial and military assistance from the West (see Table 4). In the final twist, the treaties made the state pro-Western.

Table 4. Government Foreign Debts, 1861–98[16]

Year	Purpose	Sum (in Silver *Liang*)	Debtor	Annual interest (%)
1861–66	Counter-Taipings	1,609,925*†	Foreign merchants in JS, FJ and GD	?
1867–68	Counter-Muslem Rebellion	2,200,000*	Foreign merchants in SH	18.0
1874	Taiwan defence	2,000,000§	British bank	8.0
1875	Counter-Muslem Rebellion	3,000,000†	British banks	10.5
1877–78	Counter-Muslem Rebellion	6,750,000§	British bank	15.0
1883–85	Coastal defence	13,602,300§	British bank	9.0
1886	Naval updating#	980,000§	German bank	5.5
1887–88	Flood control	1,968,800*†	British bank	7.0
1893–95	Coastal defence (1)	42,090,000§¶	British and German banks	6.0–7.0
1895–96	War reparation to Japan	200,000,000¶	French and Russian banks	4.0–5.0
Total		274,201,025 (10,227.7 metric tons)		

Note: * Loans for 2 years. † Loans for 2–5 years. § loans for 6–19 years. ¶ Loans for 20 years and over. # Fund abused for the Summer Palace. JS–Jiangsu. FJ–Fujian. GD–Guangdong. SH–Shanghai.

Third, with the decline of the agricultural sector as the dominant revenue-earner and the rise in importance of commerce, the old tax structure became obsolete (see Tables 5 and 6). Unlike taxes from the agricultural sector which were dictated by fluctuations in population and farming land, the revenue from customs duties was determined by trade performance. A rapid increase in duties marked an unmistakably intensive, market-driven growth. A turning point was reached in 1903–4 when for the first time in Chinese history customs duty revenue surpassed revenue from taxes on agriculture. This ushered in an era of mercantilism as the state increasingly relied on commerce to maintain its function.

Table 5. Old Tax Structure (in *Silver-Liang*), 1652–1766[17]

Type	Land and Poll	Grain*	I	Salt	Customs	Other	II	I:II
1652	21,260,000	8,430,000 (5,620,000 *shi*)		2,120,000	1,000,000	–		9.52
Share in total	*64.80%*	*25.69%*	*90.49*	*6.46%*	*3.05%*	–	*9.51*	
1682	26,340,000	9,510,000 (6,340,000 *shi*)		2,760,000	2,000,000	–		7.53
Share in total	*64.86%*	*23.42%*	*88.28*	*6.80%*	*4.92%*	–	*11.72*	
1766	32,910,000	12,476,700 (8,317,800 *shi*)		5,740,000	5,400,000	4,490,000		2.90
Share in total	*53.93%*	*20.45%*	*74.38*	*9.41%*	*8.85%*	*7.36%*	*25.62*	

Note: I) Taxes specifically from agriculture. II) Taxes on the whole economy. *In the seventeenth and eighteenth centuries , the average price of rice was 0.94–2.18 *liang* per *shi* in the Yangzi Delta[18] and 1.03–1.93 *liang* per *shi* in Guangdong and Guangxi.[19] Hence, a mean value of 1.5 *liang* per *shi* is used for estimation.

Table 6. New Tax Structure (in *Silver-Liang*), 1820–1910[20]

	I		II		I:II				
Year	Agricultural Taxes*	Index	Customs Duties	Index		Tax-payers	Index	Farming land†	Index
1820	30,206,144	100	2,932,796§	100	10.3	353,377,694	100	779,321,984	100
1825	–	–	–	–	–	379,885,340	108	–	–
1830	–	–	–	–	–	394,784,681	112	–	–
1835	–	–	–	–	–	401,767,053	114	–	–
1840	–	–	–	–	–	12,814,828	117	–	–
1845	30,213,800	100	–	–	–	421,342,730	119	–	–
1850	–	–	–	–	–	429,913,134	122	–	–
(1851	–	–	–	–	–	–	–	756,386,244	97)
1855	–	–	–	–	–	318,845,752	90	–	–

1860	–	–	–	–	–	–	–	–	–
1865	–	–	8,245,394	281	–	260,697,717	74	–	–
1870	–	–	10,041,826	342	–	271,793,461	77	–	–
(1873	–	–	11,257,824	384	–	–	–	756,631,857	97)
1875	–	–	12,893,471	440	–	305,014,000¶	86	–	–
						368,063,232	*104*		
1880	–	–	14,692,208	501	–	288,559,000#	82	–	–
						368,153,866	*104*		
1885	32,356,768	107	14,056,914	479	2.3	295,881,000**	84	–	–
						358,036,060	*101*		
(1887	32,792,627	109	16,411,544	560	2.0	377,636,000	107	911,976,606	117)
1890	33,736,023	112	19,100,657	651		333,242,000††	94	–	–
						380,717,468	*108*		
1895	–	–	20,694,712	706	–	332,336,000§§	94	–	–
						379,682,395	*107*		
(1898	–	–	22,976,817	783	–	319,719,000¶¶	90	–	–)
						367,324,219	*104*		
1900	–	–	24,456,571	834	–	–	–	–	–
(1903	28,086,771	93	27,659,313	943	1.0	–	–	–	–)
(1904	–	–	28,132,456	959	–	–	–	–	–)
1905	–	–	30,965,612	1056	–	–	–	–	–
1910	–	–	35,340,714	1205	–	–	–	–	–
(1912	–	–	–	–	–	368,146,520	104	–	–)

Note: Entries in parentheses are supplementary to show continuation of the data. Italicised numbers are estimates weighted to include the missing provinces.[21] *Including the Land–Poll Combined Tax, Grain–to–Cash Conversion (*liangzhe*) and Silver Loss Discount (*haoxian*). †In *mu*. §Estimated figure based on the highest share of the customs duty revenue (8.85%) during 1652–1766. ¶No data for seven provinces (Anhui, Shaanxi, Gansu, Xinjiang, Taiwan, Guangxi and Yunnan). #No data for nine provinces (Jilin, Anhui, Shaanxi, Gansu, Xinjiang, Fujian, Taiwan, Guangxi and Yunnan). **No data for eight provinces (Anhui, Gansu, Xinjiang, Fujian, Taiwan, Guangxi, Yunnan and Guizhou). ††No data for six provinces (Anhui, Gansu, Xinjiang, Taiwan, Guangxi and Yunnan). §§No data for six provinces (Anhui,

Gansu, Xinjiang, Taiwan, Guangxi and Yunnan). ¶¶No data for eight provinces (Jilin, Anhui, Gansu, Xinjiang, Fujian, Taiwan, Guangxi and Yunnan).

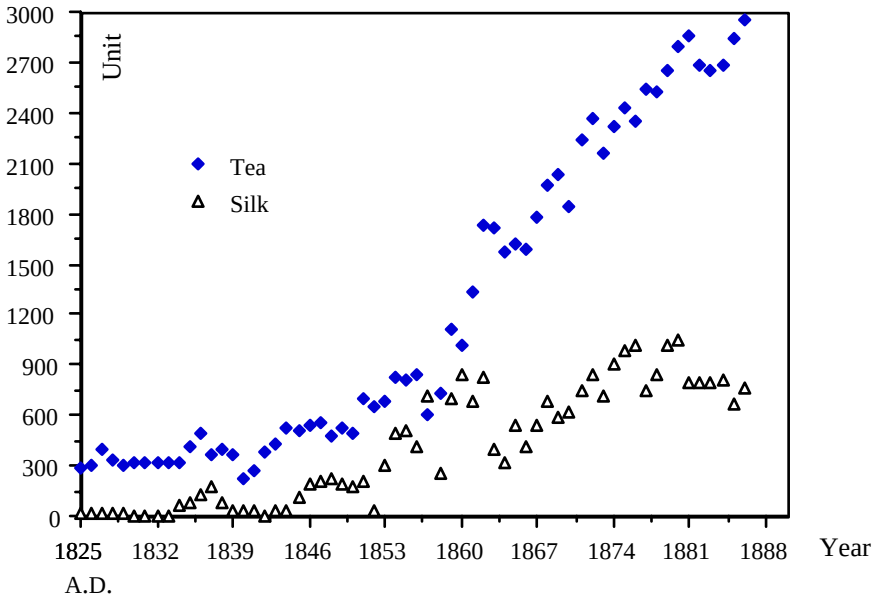
III. ECONOMIC PERFORMANCE UNDER THE NTR

a. Market-driven growth

First of all, with the 44 main trading ports open to foreigners, the savings were enormous. Under the *Canton–Cohong* system, tea produced in Fujian had to travel some 1,400 kilometers south before being exported. The cost of inland transport accounted for one-third of the free on board (FOB) price. The opening of Fujian allowed an astonishing total saving of 600,000 *liang* of silver (22.4 metric tons) per year for the buyers from the annual 150,000 *dan* tea trade.[22]

Second, foreign trade rapidly proliferated across the empire. Most noticeable were (1) around 1899 opium imports dropped from the early 44.5 to 13.8 percent of China's total imports in value (partly because after the opium trade was legalised, home-grown supply of the drug substituted imports;[23] and (2) China's tea and silk exports rocketed (see Figure 1).

Figure 1. Rise in Tea[a] and Silk[b] Exports[24]



Note: [a]In 100,000 *jin*. [b]In 10,000 *jin*.

In terms of the total volume and value of foreign trade, the increase was spectacular. According to the Nanking Treaty, the ceiling for the customs duties was set at five percent. Although this rate was re-endorsed by the 1858 Tianjin Treaty, with numerous concessions and duty-free treatments, the actual rate after 1858 was only three percent.[25] Thus, it is safe to use the ceiling five percent to estimate the total value of trade with the formula $V_i = \frac{C_i}{r}$, where V_i is the total value of goods traded during period i; C_i, the aggregate customs duties paid during period i; and *r*, the ceiling duty rate (2.8 percent before 1842[26]). The following result is derived from the data in previous Table 6:

Year	Value in silver *liang*	(in metric ton)	Value index
1820	104,742,714	(3,906.9)	100
1861	110,465,280	(4,120.4)	105
1871	215,676,120	(8,044.7)	206
1881	301,694,420	(11,253.2)	288
1891	402,676,620	(15,019.8)	384
1901	437,310,820	(16,311.7)	418
1910	706,814,280	(26,364.2)	675

There was also a hidden factor. With the rise of the opium trade, a rapid silver drain from China caused severe deflation in the early nineteenth century. In 1838, the exchange rate of one *liang* of silver rose from the previous official par of 1,000 bronze coins to 1,600. It rose further to 2,300 coins in 1845 and 4,000 coins in 1899 with the average deflationary rate of 1.4 percent over the period of a century.[27] Thus, the real growth index for the total volume of foreign trade has to be much greater than the value index:

Year	Volume index (1820 price)
1820	100
1861	187
1871	418
1881	672

1891	1,031
1901	1,287
1910	2,362

Even so, the estimate is conservative as the actual duty rate was lower with the practice of a duty free regime. Any such increase means a higher degree of commercialisation.

Third, geographically, Guangzhou's importance in foreign trade was surpassed by Jiangsu, where the new trading centre Shanghai was located. Foreign trade also penetrate into China's interior (see Table 7). The whole development was dictated by the market itself.

Table 7. Percentage Shares of Customs Duties, 1861–1910[28]

	I	II		III				IV						
Year	DB	HeB	AH	JS	ZJ	FJ	GD	HuB	HN	JX	GX	SC	YN	Total
1861	–	1.81	–	41.66	7.41	18.28	30.84	–	–	–	–	–	–	100.00
1865	2.10	4.16	–	31.49	5.14	26.70	13.45	10.78	–	6.18	–	–	–	100.00
1870	2.67	4.17	–	32.69	7.18	22.42	12.07	13.39	–	5.41	–	–	–	100.00
1875	1.88	2.85	–	33.40	6.33	22.67	14.05	13.28	–	5.54	–	–	–	100.00
1880	2.08	2.96	0.31	35.00	4.81	21.68	13.52	14.57	–	5.07	–	–	–	100.00
1885	2.21	3.08	0.46	32.78	5.23	21.91	14.75	14.06	–	5.52	–	–	–	100.00
1890	2.09	3.18	2.16	30.83	5.51	17.45	23.26	10.20	–	5.13	0.01	–	0.18	100.00
1895	0.68	4.18	1.88	38.44	5.98	10.78*	18.26	12.74	–	4.98	0.03	1.60	0.45	100.00
1900	2.91	3.94†	4.19	37.36	5.32	8.65	17.88	12.14	–	3.74	1.22	1.88	0.77	100.00
1905	2.81	9.55	3.26	42.27	4.07	6.04	14.15	10.92	0.39	2.12	1.73	1.79	0.90	100.00
1910	5.59	9.22	1.67	36.39	3.81	4.98	17.02	13.37	0.74	2.15	2.04	2.24	0.78	100.00

Note: I) Far North (Manchuria). II) Northeast. III) Southeast coast. IV) Southwest and South inland. Abbreviations for provinces: DB–Dongbei (Manchuria), HeB–Hebei, AH–Anhui, JS–Jiangsu (predominantly Shanghai), ZJ–Zhejiang, FJ–Fujian including Taiwan until 1895, GD–Guangdong (Guangzhou only), HuB–Hubei, HN–Hunan, JX–Jiangxi, GX–Guangxi, SC–Sichuan, YN–Yunnan. *Point of decline in trade after Japanese colonisation of Taiwan. †-Decline due to the Boxer Rebellion.

In addition, the shares of customs duties suggest differences in market conditions in different zones. Conditions in the West-influenced south were far more favourable than Russia-Japan-affected north. This pattern is revealed further in the East China Sea coast: after Japan colonised Taiwan in 1895 and extended its influence in on-shore Fujian, Fujian's foreign trade plunged by 50 percent (as at 1910).

Fourth, as foreign trade multiplied, a new pattern of a balance of payment developed. China no longer held its position as a net goods exporter (see Table 8). This is a clear sign that China gradually assimilated to and synchronised with the world economy.

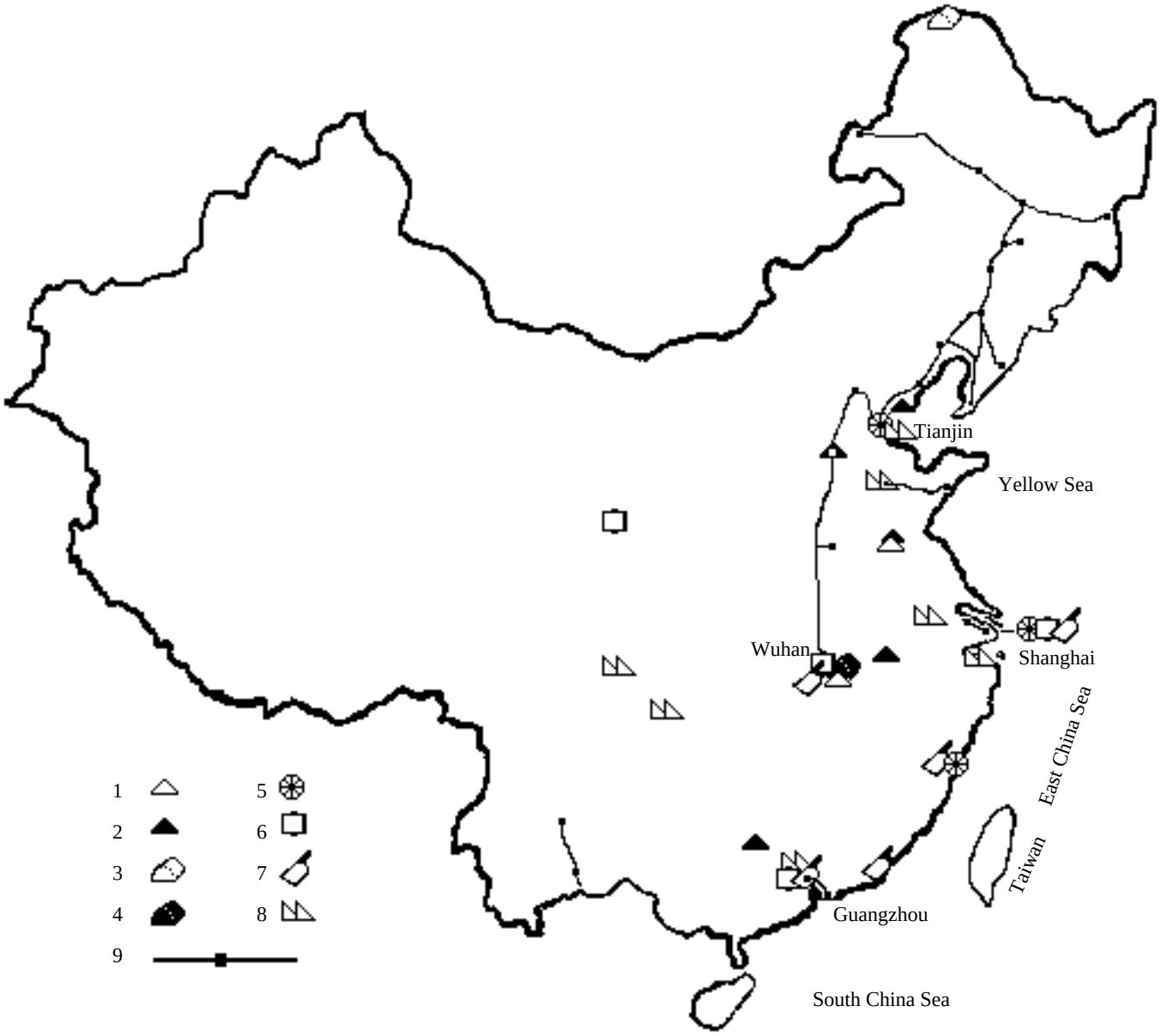
Table 8. Trade Performance (in 10^6 Silver-Yuan), 1871–1911[29]

	Total Value Traded		Import (I)	Export (II)			I–II
Period		Index		Index		Index	
1871–73	216 (216)	100 (100)	106 (106)	100 (100)	110 (110)	100 (100)	+4 (+4)
1881–83	234 (276)	108 (128)	126 (148)	119 (140)	108 (139)	98 (126)	–18 (–9)
1891–93	386 (525)	179 (243)	219 (298)	207 (281)	167 (227)	152 (206)	–52 (–71)
1901–3	784 (1,223)	363 (566)	473 (738)	446 (696)	311 (485)	283 (440)	–162 (–253)
1909–11	1,272 (2,213)	589 (1,025)	702 (1,221)	662 (1,152)	570 (992)	518 (902)	–133 (–229)

Note: Figures in parentheses are at the 1871 constant price.

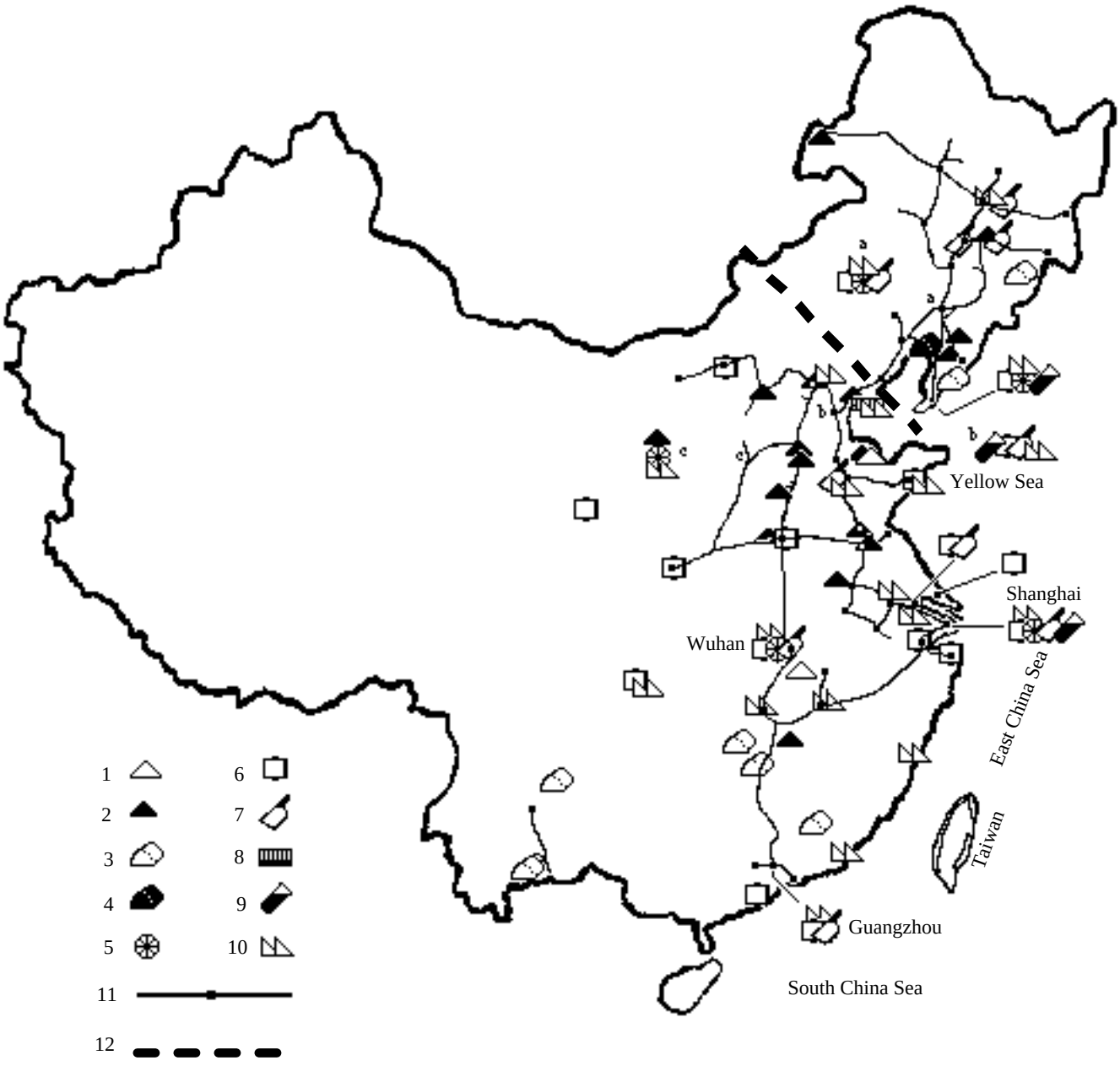
Fifth, there was a clear trend of railway-induced investment in new industries (see Figures 2 and 3).

Figure 2. Railways and Modern Industries, *c.* 1906[30]



Note: Contemporary China is taken as a proxy for the Empire. 1) Iron-mining. 2) Coal-mining. 3) Nonferrous metals. 4) Iron and steel. 5) Engineering. 6) Textiles. 7) Food-processing. 8) Others. 9) Railway lines.

Figure 3. Expanding Railways and Modern Industries, *c*. 1937[31]



Note: Contemporary China is taken as a proxy for the Empire. Points: a) Shenyang; b) Tianjin; c) Taiyuan. 1) Iron-mining. 2) Coal-mining. 3) Nonferrous metals. 4) Iron and steel. 5) Engineering. 6) Textiles. 7) Food-processing. 8) Chemicals. 9) Building materials. 10) Others. 11) Railway lines. 12) Dividing line between China proper and Japan-controlled Manchuria.

The railways effectively shifted the centre of industrial gravity from the east coast and the Yangzi reaches to a vertical belt with a clear bias towards heavy industry:[32]

Table 9. Distribution of Industrial Workers in Regions and Sectors

A.	Region	Workers	% of all workers
	Shanghai	36,220	46.4
	Hanko	13,350	17.0
	Guangzhou	10,300	13.2
	Tianjin	4,180	5.4
	Fuzhou	3,240	4.1
	Nanjing	1,000	1.3
	Jiujiang	1,000	1.3
	Shantou	600	0.8
	Xiamen	500	0.6
	Other	7,700	9.9
	Subtotal	78,090	100.0
B.	Sector		
	Heavy industry[33]	51,700	52.7
	Light industry	42,800	43.6
	Other	3,600	3.7
	Subtotal	98,100	100.0

Traditional workshops were gradually replaced by modern factories. For example, by 1894 Chinese private modern filatures in Guangzhou and Shanghai employed 13,600 workers and supplied about 70 percent of China's total silk export.[34] During the same period, private cotton-textile factories hired some 6,500 workers, able to produce 96,300 rolls a year for marketing.[35] Chinese private investment also found its footing in matches, paper, printing, shipbuilding, engineering and machinery. Overall, in 1894, the private sector employed at least 28,000 factory workers, about one-third of China's modern work-force.[36] China's

modern industries progressed so efficiently in Asia that Japan had to capture them by force later to eliminate competition.[37]

b. Evaluation: Was China simply a victim?

One of the most visible outcomes of the NTR was the key role played by foreign traders and foreign investors (railways and loans being examples) in China's market (see Tables 1–2, 7–8). To Marxist–Maoists and nationalists alike, this is the most upsetting sign of foreign imperialism. However, foreign control over trade and investment alone does not automatically justify the claim that China was a victim of external exploitation. Two questions will have to be asked: (1) Given the importance of the customs revenue, who paid most of the customs duties and by how much? (2) Were the foreigners the sole beneficiaries of the revenue?

From Table 10 as well as Table 1, it is obvious that foreigners paid most of the customs duties. The data reveal the fact that foreign traders were the main contributor to a 'second budget' for the Qing. As shown earlier in Table 6, by the turn of the twentieth century, revenue from the customs duties matched that from the agricultural sector. Although small in number, foreign traders had as much fiscal weight as several hundred millions of farming Chinese.

Table 10. Duties at Shanghai Customs,[38] 1861–1910[39]

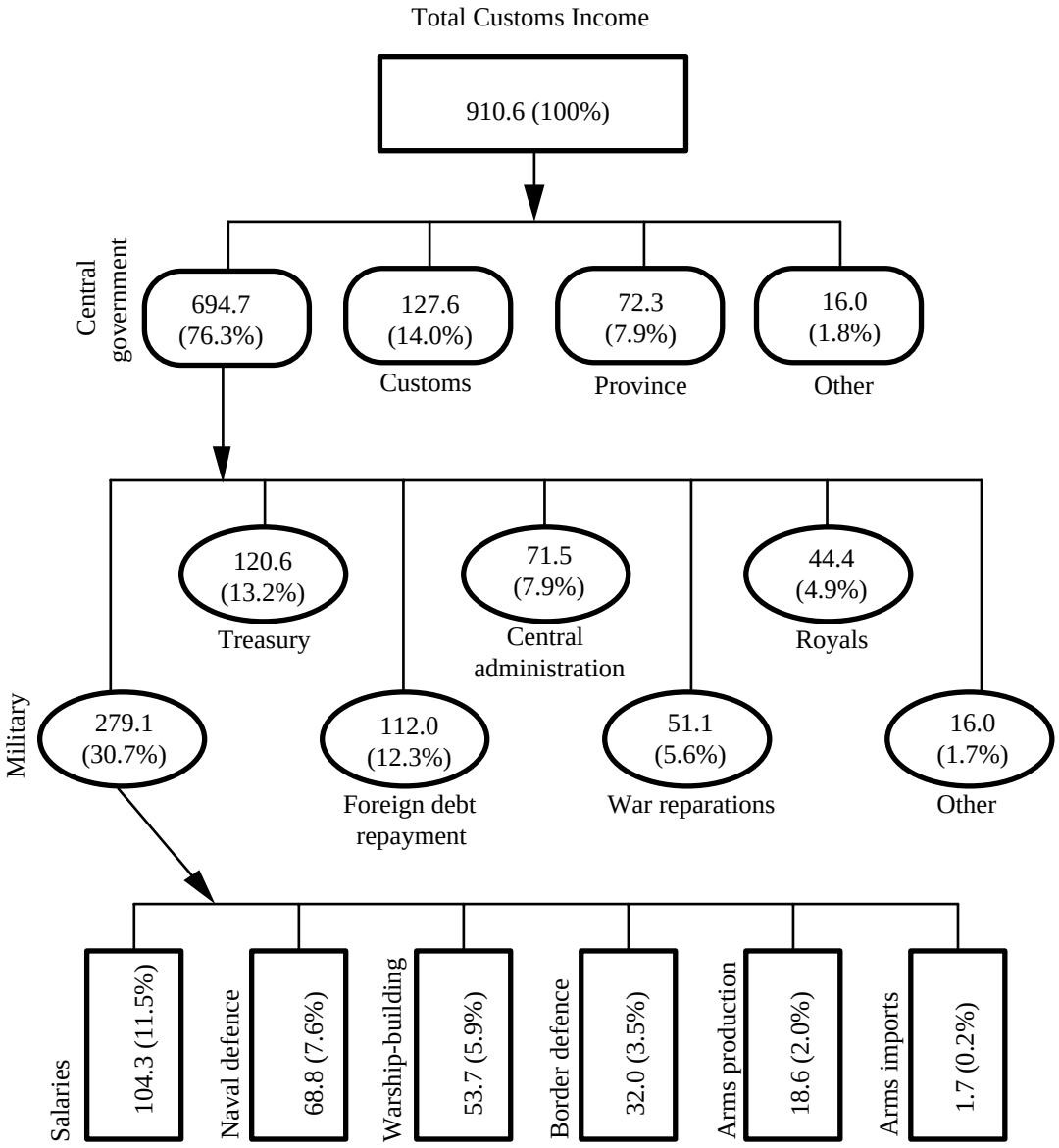
Year	Total *	By foreigners	% in Total	By Chinese	% in Total
1861	1,500,507	1,500,507	100.0	0	0.0
1866	1,080,148	1,080,148	100.0	0	0.0
1871	2,143,110	2,143,110	100.0	0	0.0
1873	1,982,361	1,976,134	99.7	6,227	0.3
1878	2,175,779	1,990,595	91.5	185,184	8.5
1883	2,357,503	2,135,413	90.6	222,090	9.4
1888	3,658,811	3,348,224	91.5	310,587	8.5
1893	3,674,996	3,288,984	89.5	386,012	10.5
1898	4,820,657	4,445,212	92.2	375,445	7.8

1903	7,198,990	6,768,598	94.0	430,392	6.0
1910	7,405,551	6,900,372	93.2	505,179	6.8

Note: *Including both import and export duties, in silver *liang*.

Another common illusion is that since the Qing state mortgaged China's customs duties to the West, the duty revenue never benefited the Chinese. Quite the opposite. In conjunction with Table 10, Figure 4 shows that the lion's share of the income from customs duties was controlled by the Qing state and distributed among seven earmarked funds. The priority was given to national defence and internal peace-keeping as one-third of the total income was allocated to the military, equivalent to the combined shares for the custom duties, foreign debt repayment and war reparations. The moneys kept for the central administration and the royals were rather trivial, and certainly not sufficient for excessive rent-seeking by the state.

Figure 4. Distribution of Total Income from Customs Duties, 1861–1910[40]



Note: In million *liang* of silver. Figures in parentheses are percentages of the total.

It is obvious that the new revenue from the customs duties was milked from foreigners but used by the Qing state for legitimate purposes.

Now it is easy to assess the Maoists' claim that 1840 marked the beginning of a 'semi-colonial' China, although the term itself has never been clearly defined. The closest thing

was the Japanese puppet regimes of the 1930s–40s in Manchuria and Northeast China proper. Thus, China's semi-colonial status occurred much later and did not last long.

It is worth noting that foreign powers came to China with very different purposes. As the Westerners approached China to trade for profit, the Russians and Japanese like opportunistic scavengers came to loot China after it was badly injured. This is clearly reflected by their appetite for China's plentiful territory and wealth. By 1911, Russia and Japan grabbed in all three million square kilometres, or 15 percent of the Qing territory. In 1895 Japan demanded an astronomical war reparation of 230 million *liang* of silver (8,580 metric tons), a sum over 10 times greater than all the previous reparations from China put together.[41] If anything, in its entire modern history, China fell victim primarily to Russo-Japanese colonialism.

III. OTHER REFORMS AND THE DEMISE OF THE QING

a. Voluntary reform: the 'Westernisation Movement'

Despite China's humiliating experience with Western demands, the NTR represented the first step of a long line of reforms in post-Opium War History. The most influential one was the 1870–95 'Westernisation Movement', aimed at rebuilding China's military strength and thus sovereignty. By now, with newly-established confidence and financial resources, the Qing state appeared proto-Gerschenkronian as it dismantled remaining trade barriers, promoted modern industries and initiated technological dissemination.

With the priority to build a modern arms industry with naval hardware, between 1861 and 1910, a quarter of the Qing military expenditure was invested in the arms industry (totaling 72,300,000 *liang* of silver or 2,696.8 metric tons). Western technicians were hired and capital goods imported. The first modern gunboat was built in 1868, which marked a new era of import substitution industrial growth (ISI).[42] By 1890, the number of government-sponsored ordnance factories had grown to 19 with a work-force of some 11,000, some 10 percent of China's modern work-force.[43] Between 1867 and 1894, the Shanghai Arsenal received a total investment of 2,920,000 *liang* of silver (108.8 metric tons) and developed into a huge complex of 13 divisions with 2,821 workers.[44] It was the largest in East Asia and one of the largest in the world at that time.[45] By 1894, this arsenal alone had produced in all 561 heavy machines, 15 ships, 585 cannons, 563 torpedoes, 51,285 rifles, 158,250 bullets, 1,201,900 shells, 411,023 artillery shells and 4,081,469 pounds of explosive.[46]

In addition, a modern naval academy was established in 1867 in Majiang to train officers under several dozen French instructors. Four more were founded in 1880 (Tianjin), 1887 (Guangdong), 1890 (Nanjing) and 1903 (Yantai).[47] The standard four-year courses included English, geography, mathematics, geometry, physics, chemistry, astronomy, meteorology, cartography, steam engine, hydromechanics, calculation of longitude and latitude, reckoning, pilotage, artillery, and surveying.[48] Schools were also established to train seamen with skills such as the use of cables and knots, handling of sails, steering, use of the compass, rowing, swimming, and use of firearms and swords.[49] Moreover, from 1876 onwards, naval cadets were sent to foreign naval academies and shipyards in Western Europe, mainly Britain and France, to learn the latest technology and craft.[50]

The result of the government efforts was impressive. By 1875, China had a new navy with two modern fleets, equipped with modern ships and Western training and management.[51] There were also provincial naval forces in Fujian and Guangdong Provinces, under the command of the Southern Sea Minister. By the Sino-Japanese War in 1894–95, the total displacement tonnage of the Northern Sea Fleet alone had reached 53,394 metric tons.[52] Such progress was closely followed by western observers. In 1872, they reported that 'Chinese military power was vastly different from what it had been in 1860', 'the output of factories and shipyards was impressive', and 'Chinese-built warships would soon equal the highest European standards'.[53]

State involvement in modern industry was not limited to arms. In 1884, another 26,000 workers were on the government payroll, producing coal, copper, gold, silver, iron, steel and textiles which made the state the largest employee in the modern sector:

Table 11. Capital Investment Pattern, Foreign vs Chinese[54]

Investor	Workers employed	% in all
Foreigners	34,000	34.3
Chinese	65,000	65.7
(Private	28,000	28.3)
(State	37,000	37.4)
Total	99,000	100.0

Thanks to the state initiatives, foreign control was not as overwhelming as in the railways.

b. The Japanese invasion and the ‘One-Hundred-Day Reform’

The fruit of the Westernisation Movement was brutally destroyed by the Japanese invasion of mainland Asia in 1894 as the very symbol of the Westernisation Movement–the Northern Sea Fleet–was defeated in a close match with heavy losses on both sides. The following 1895 Maguan Treaty pushed China back to square one and the pattern associated with the Opium War repeated itself. This time, ‘later industrialisers’ – Japan, Germany and Russia – came in for the kill as seen from the 1896 Beijing (Peking) Treaty, the 1898 Fuzhou Concession Agreement, the 1898 Jiaozhou Bay Concession Treaty, and the 1898 Lü-Da Concession Treaty.

The Chinese radical, idealistic elite responded to this regression with the ‘One-Hundred-Day Reform’. Instead of rebuilding China’s military strength, the edge of this reform was to modernise the state itself after the British model of constitutional monarchy to facilitate capitalist industrialisation. With the direct involvement of Emperor Guangxu (r. 1875–1908), the reformers master-minded a range of institutional changes including (1) appointing reformers to replace old mandarins in the government, (2) abandoning the traditional Imperial Examination for bureaucrat recruitment, (3) encouraging entrepreneurship and private investment in mining, manufacturing, transport and telecommunication, (4) establishing a central bank, (5) modernising state budgeting, (6) streamlining the armed forces, (7) upgrading modern education, (8) experimenting with freedom of speech and freedom of travelling overseas. With hindsight, these reforms were too far ahead of their time as these revolutionary changes have yet to be fully accomplished in contemporary China.

The reform created such a stir in the old Establishment, groups with vested interests under the banner of Empress Dowager Cixi (1835–1908) launched a military coup with the support of China’s gentry class who were threatened to be made outcasts. The clock was then reset: China had no reform until 1911 when, *à la* the French 1789 model, Dr. Sun Yat-sen’s revolution ended the Qing monarchy.

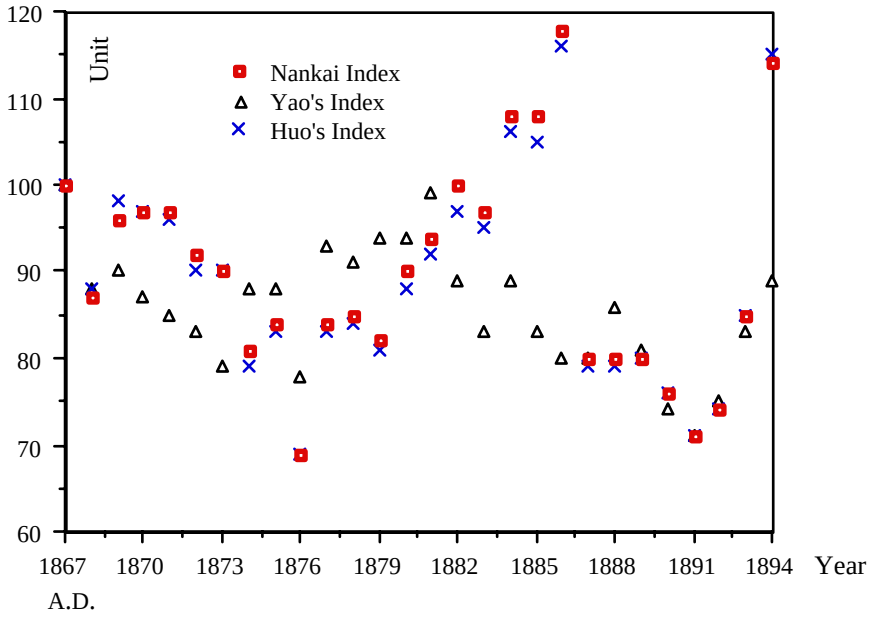
IV. CONSEQUENCE OF THE REFORMS AND STATE TRANSFORMATION

Reforms and state transformation in Qing China originated from the trade of humble, contraband opium which triggered a long chain reaction for a century. Until 1910, the mercantilistic NTR was reasonably achieved. The Qing state benefited at least from the second budget, while the Chinese economy was boosted by the 'Ricardian gains' – the 'vent for surplus' type – from overseas trade, foreign capital, Western technology, and the rise in modern industries. Such gains certainly eased the pain of the erosion of China's sovereignty. The pro-active, quasi-developmental Westernisation Movement marked a systematic attempt at ISI which demonstrated how far the state has been transformed. Heavy public spending on industrial projects was justified by the need for and fetish of modern arms.

However, these two reforms did not come about without problems, some fatal. The NTR was never popular among the public who saw the Qing state incompetent in keeping foreign powers at bay, especially Japan which China always despised culturally, politically and economically.[55]

This resentment was refuelled by two marked consequences of rampant foreign trade. First, China's terms of trade steadily deteriorated (see Figure 5). Second, there was chronic deflation of China's silver currency. These two factors doubly discounted the relative price per unit of China's exports. Thus, the mounting income from customs duties meant that much more domestic produce was required for exportation to make up the same revenue let alone an increasing one (see Table 6).

Figure 5. Changes in China's Terms of Trade[56]



Moreover, despite the creation of a second budget, the reforming state did not touch the old tax system. Although the nominal rate maintained constant (see Table 6), as deflation worsened, ordinary households had to sell more in exchange for the same amount of cash to pay the tax. Thus, in the end, the real burden of Land–Poll Combined Tax must have increased three-fold. Now the very tax regime which helped China's commercialisation earlier began to work against the state. In addition, during the post-Opium War period, extra surcharges were common which broke the political taboo against having a heavy tax burden. The Percentage Toll (*lijin*, or *likin*) – originally imposed in 1853 as a temporary measure for suppressing the Taiping rebels – was the most hateful of all. Hungry for funding, the Westernisation Movement activists only institutionalised the new taxes which proved counter-productive for the embryonic 'developmental state'. The erosion of the state's political and moral authority was shown by mass rebellions such as the anti-Manchu Nian (1852–68) and pro-Christian, anti-Confucian Taiping (1851–64) rebellions.

There was a financial explanation. By 1910, state access to China's total GDP had increased from the early 1–2 percent to 16 percent,[57] unprecedented in Chinese history but still not enough to overturn China's old economic structure in the given time. The 16 percent

was not always guaranteed. Sweeping 15 farming provinces, the Taipings firmly controlled the most affluent southern region of the Empire – much of Anhui, Jiangsu, Zhejiang, Fujian, Hubei and Jiangxi. Meanwhile, the Nians haunted eight farming provinces in the north. The Taiping core area alone easily cost the Qing Treasury 34 percent of its agricultural revenue (as at 1849) and 49 percent of its customs duties (as at 1865, excluding Shanghai). The 'Dagger Society' (*xiandaohui*), a close ally of the Taipings, captured Shanghai in 1853–54 which jeopardised another one-third of the Qing customs duties.[58] To survive the state then became increasingly reliant on new taxes with political risks and pursued Western assistance in a dangerous liaison. This in turn alienated the state further from society. By 1910 there was a consensus among the masses that the Qing state was a traitor to China and its people.

As the 'top-down' reformers increasingly concentrated in a few cities with their agenda more and more isolated from that of the rest of the population, the 1898 'One-Hundred-Day Reform', critical for fully-fledged modern state-hood, was aborted. This downfall was not because of external interference but due to internal crises accumulated gradually right from the beginning of the NTR as the benefits of reforms did not trickle down enough to enrich citizens at the grassroots level, especially in rural China. Not surprisingly, there was no public outcry against Cixi's reactionary coup to end the 'One-Hundred-Day Reform'.

Although China achieved some noticeable growth in the market during this period, its state transformation of the first round failed. But the Qing 'state failure' did not result from 'institutional sclerosis' but from reforms' negative externalities regarding socio-economic stability (currency deflation and tax burden) and national security (law and order, and sovereignty) so much so that the 'social costs' for the majority exceeded the 'social benefits' from changes, a problem which haunted China for decades to come.

ENDNOTES

[1] See Quan Hansheng, 'Lielun Xinhanglu Faxianhoude Zhongguo Haiwai Maoyi' ('On China's Overseas Trade after the Discovery of a New Asia-Europe Sea Route'), in Zhang Bincun and Liu Shiji (eds.) *Zhongguo Haiyang Fazhanshi Lunwenji* (*Selected Essays on the Maritime History of China*) (Taipei: *Academia Sinica*,

1993) vol. 5, pp. 11-12; C. J. A. Jörg, *Porcelain and the Dutch China Trade* (Lange: Martinus Nijhoff, 1982), chs 1 and 3 and Appendix 11.

[2] See Huang Qichen, 'Mingqing Guangdong Shangbang' ('Merchant Groups in Guangdong during the Ming–Qing Period'), *Zhongguo Shehui Jingjishi Yanjiu* (*Studies of Chinese Economic History*) 4 (1992), 36; Yen-P'ing Hao, 'A 'New Class' in China's Treaty Ports: The Rise of the Compradore-Merchants', *The Business History Review* 4 (1970), 446–59; Yen-P'ing Hao, *The Compradore in Nineteenth-Century China: Bridge between East and West* (Harvard University Press, 1970).

[3] W. L. Schurz, *The Manila Galleon*, reprint, (Manila: R. P. Garcia, 1985), pp. 63–4; Gungwu Wang, *China and the Chinese Overseas* (Singapore: Times Academic Press, 1991), ch. 9.

[4] Immanuel Wallerstein, *The Modern World-System* (New York: Academic Press, 1974), p. 338; Anthony Reid, *Southeast Asia in the Age of Commerce, 1450–1680* (Yale University Press, 1993), p. 27.

[5] Gang Deng, *Chinese Maritime Activities and Socio-economic Consequences, c. 2100 B.C. –1900 A.D.* (London and West Port: Greenwood Press, 1997), Appendix C.

[6] Gang Deng, *Development versus Stagnation: Technological Continuity and Agricultural Progress in Premodern China* (London and West Port: Greenwood Press, 1993), pp. 19–20 and Appendix 1.

[7] Dwight Perkins, 'Government as an Obstacle to Industrialization: the Case of Nineteenth-Century China', *Journal of Economic History* 27 (1967), pp. 478–92; *cf.* Albert Feuerwerker, 'The State and the Economy in Late Imperial China', *Theory and Society* 13 (1984), 300; Gang Deng, *The Chinese Premodern Economy – Structural Equilibrium and Capitalist Sterility* (London and New York: Routledge, 1999), Appendix 7.

[8] Liang Fangzhong, *Zhongguo Lidai Huko Tiandi Tianfu Tongji* (*Dynastic Data of China's Households, Cultivated Land and Land Taxation*) (Shanghai: Shanghai People's Press, 1980), pp. 391, 394, 397, 398, 401, 414–19.

[9] Arnold Toynbee (ed.), *Half the World: the History and Culture of China and Japan* (London: Thames and Hudson, 1973), ch. 11.

[10] From 1842 to 1901, China signed in all 26 treaties for 73 concessions with 12 foreign powers including unilateral most-favoured-nation treatment for trade, consular jurisdiction, free access to the interior, permanent

residency for foreigners, the right to deploy foreign armed forces, war reparations and territorial cessions. See Zhao Dexin (ed.), *Zhongguo Jingjishi Cidian* (*Dictionary of Chinese Economic History*) (Wuhan: Hubei Dictionary Press, 1990), pp. 874–80). Between 1842 and 1900, China's war reparation premiums totalled 713 million *liang* of silver (26,600 metric tons), an equivalent to 22 times over the Qing annual revenue from agricultural taxes of the same period (Zhao, *Dictionary of Chinese Economic History*, pp. 874–80; Tang Xianglong, *Zhongguo Jindai Haiguan Shuishou He Fenpei Tongji* (*Statistics of Customs Revenue and its Distribution in Modern China*) (Beijing: Zhonghua Books, 1992), p. 33; Liang, *Dynastic Data of China's Households, Cultivated Land and Land Taxation*, pp. 387, 397–8, 401, 415–16). China was broke and its geopolitical landscape was changed as the country became 'zoned' by foreign powers. See Hermann Kinder and Werner Hilgemann (eds.), *The Penguin Atlas of World History* (London: Penguin Books, 1978), p. 90.

[11] Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, pp. 54–60.

[12] Source: Based on Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, p. 21.

[13] Source: Based on ZTBZ (Zhongguo Tielushi Bianji Yanjiu Zhongxin [Research Center of History of Railways in China]) (ed.), *Zhongguo Tielu Dashiji, 1876–1995* (*Main Events in the History of Chinese Railways, 1876–1995*) (Beijing: China's Railway Press, 1996); Yang Yonggang, *Zhongguo Jindai Tielushi* (*A History of Railways in Modern China*) (Shanghai: Shanghai Books, 1997).

[14] Source: Based on ZTBZ, *Main Events in the History of Chinese Railways*; Yang, *A History of Railways in Modern China*.

[15] Based on Yang, *A History of Railways in Modern China*; *cf*. Angus Maddison, *Chinese Economic Performance in the Long Run* (Paris: OECD, 1998), p. 51.

[16] Source: Based on Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, pp. 34–41.

[17] Source: Based on Zhou Boudi, *Zhongguo Caizheng Shi* (*A History of State Finance in China*) (Shanghai: Shanghai People's Press, 1981), pp. 419–21, 426.

[18] Yie-chien Wang, 'Secular Trends of Rice Prices in the Yangzi Delta, 1639–1953', in T. G. Rawski and L. M. Li (eds.), *Chinese History in Economic Perspective* (Berkeley: University of California Press, 1992), pp. 40–7.

[19] R. B. Marks, 'Rice Prices, Food Supply, and Market Structure in Eighteenth-Century South China', *Late Imperial* China 2 (1991), 102.

[20] Source: Based on Liang, *Dynastic Data of China's Households, Cultivated Land and Land Taxation*, pp. 10, 253–4, 256–7, 264–7, 380, 400, 401, 414–8, 426; Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, pp. 126–8.

[21] Mean values are applicable to Anhui (6.30%), Shaanxi (4.66%), Gansu (2.71%), Fujian (4.40%), Guangxi (1.32%), Yunnan (2.04%), Guizhou (0.49%). Jilin (0.09%) and Xinjiang (0.10) are based on the limited statistics from one year. Taiwan is excluded due to the absence of data. The formula is: $P'_i = \frac{P_i}{(1-n)}$. Where P'_i is the estimate for the period i; P_i, the incomplete aggregate for population of the period i; *n*, the combined share of the missing provinces in China's total.

[22] Lin Manhong, 'Zhongguode Baiyin Wailiu Yu Shijie Jinyin Jianchan [1814–1850]' ('China's Silver Outflow and Decline in Gold and Silver Outputs in the World [1814–1850]'), in Wu Jianxiong (ed.), *Zhongguo Haiyang Fazhanshi Lunwenji* (*Selected Essays on the Maritime History of China*), vol. 4, (Taipei: *Academia Sinica*, 1991), pp. 234–6.

[23] Chen Ciyu, 'Yi Zhong Yin Ying Sanjiao Maoyi Wei Jizhou Tantao Shijiu Shiji Zhongguode Duiwai Maoyi' ('Study of Nineteenth Century Sino-foreign Trade based on the Trade Triangle of China, India and Britain'), in Editing Committee for *Maritime History of China* (ed.), *Zhongguo Haiyang Fazhanshi Lunwenji* (*Selected Essays on the Maritime History of Chin*a), vol. 1, (Taipei: *Academia Sinica*, 1984), pp. 156–7.

[24] Source: Based on Lin, 'China's Silver Outflow and Decline in Gold and Silver Outputs in the World [1814–1850]', 30–5.

[25] Yan Zhongping (ed.), *Zhongguo Jindai Jingji Tongji Ziliao Xuanji* (*Selected Statistical Data for Modern China's Economy*) (Beijing: Sciences Press, 1953), p. 60.

[26] Before the Opium War, the stated export duty was four percentent and import duty 1.6 percent which made an average rate of the duties at 2.8 percent. See Sun Xugang (ed.), *Jianming Zhongguo Caizhengshi* (*A Compact History of Finance of Premodern China*) (Beijing: China's Finance and Economy Press, 1988), p. 190.

[27] Sun, *A Compact History of Finance of Premodern China*, p. 204.

[28] Source: Based on Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, pp. 69–78.

[29] Source: Based on Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, p. 23.

[30] Source: Based on Chi-Keung Leung, 'China: Railway Patterns and National Goals', Research Paper No. 195 (1980), Department of Geography, University of Chicago, p. 36; Chen Dunyi and Hu Jishan (eds.), *Zhongguo Jingji Dili* (*Economic Geography of China*) (Beijing: Zhanwang Press, 1983), p. 21.

[31] Source: Based on Leung, 'China: Railway Patterns and National Goals', 61; Chen and Hu, *Economic Geography of China*, pp. 23, 322.

[32] As at 1894, based on Sun Shutang, *Zhongguo Jindai Gongyeshi Ziliao* (*Materials on Modern Industries in China*) (Beijing: Science Press, 1957), p. 1202.

[33] Given that the capital–worker ratio is much higher in heavy industry, the investment share for this sector must be much higher.

[34] Sun, *Materials on Modern Industries in China*, pp. 969, 1195.

[35] Sun, *Materials on Modern Industries in China*, pp. 1068, 1197.

[36] Sun, *Materials on Modern Industries in China*, p. 1201.

[37] Kaoru Sugihara, 'Intra-Asian Trade and East Asia's Industrialisation, 1919–1939', *Working Papers in Economic History* 44 (1998), London School of Economics and Political Science, pp. 25–57.

[38] By 1855, Shanghai had become China's leading trading port whose total export value to Britain was nearly seven times that of Guangzhou's. See Cao Tunyu, 'Ningbo Shanghaigangde Lishi Guiji Yu Xiandai Fazhan Qushi' ('Developmental Trend of Port Ningbo and Port Shanghai, Past and Present'), *Zhejiang Shehui Kexue* (*Social Sciences in Zhejiang*) 6 (1995), 93.

[39] Source: Based on Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, p. 21.

[40] Source: Based on Tang, Statistics of Customs Revenue and its Distribution in Modern China, pp. 126–9, 139–44, 170–3.

[41] Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, pp. 32–3.

[42] Hao Peiyun, *Zhongguo Haijun Shi* (*A Naval History of Modern China*) (Beiping: Xuewu Books, 1929), pp. 8–9.

[43] Sun, *Materials on Modern Industries in China*, p. 1188.

[44] Sun, *Materials on Modern Industries in China*, p. 279.

[45] M. C. Wright, *The Last Stand of Chinese Conservatism* (Stanford University Press, 1957), p. 212.

[46] Wright, *The Last Stand of Chinese Conservatism*, p. 293.

[47] Hao, *A Naval History of Modern China*, pp. 17, 65, 71, 167.

[48] Anon, *Regulations of the Northern Sea Fleet*, pp. 179–97.

[49] Anon, *Regulations of the Northern Sea Fleet*), pp. 199–204.

[50] Hao, *A Naval History of Modern China*, pp. 13, 20, 45, 159, 170–1.

[51] Xia Zhengnong (ed.), *Cihai* (*Encyclopaedia*) (Shanghai: Encyclopaedia Publishers, 1989), pp. 157, 382.

[52] Anon, *Regulations of the Northern Sea Fleet*, pp. 1–118.

[53] Wright, *The Last Stand of Chinese Conservatism*, p. 220.

[54] Sun, *Materials on Modern Industries in China*, p. 1201.

[55] In effect, in post-Opium War China, most of mass protests and revolutions were in one way or another related to Japan's aggressions.

[56] Source: Based on Wang Jingyu, 'Qianyi Jindai Zhongwai Jingji Guanxide Pingjia Wenti' ('On Evaluation of Sino-Foreign Trade Relationship'), *Jindaishi Yanjiu* (*Study of Modern History*) 1 (1991), 1–27.

[57] The traditional share was 1–2 percent. The tax in cash with silver deflation made up an extra six percent and the growth in customs revenue another eight percent (see Table 6).

[58] Liang, *Dynastic Data of China's Households, Cultivated Land and Land Taxation*, p. 415; Tang, *Statistics of Customs Revenue and its Distribution in Modern China*, pp. 69–78.