Taiping-era War Finance in Qing China: New Perspectives and Long-term Consequences

Evelyn S. Rawski* and Thomas G. Rawski*

Abstract

We offer a novel perspective on Taiping-era war finance, which most accounts view as a policy failure that produced rampant inflation without lasting benefits. The Taiping uprising caught Qing officials with an empty treasury, declining revenue and ineffectual armies. Emergency issuance of unbacked currency staved off fiscal collapse, creating space for mobilizing the provincial forces that eventually suppressed the rebels. Disruption of farming, transport and commerce contributed more to wartime inflation than new currency issues. Wartime policy design and the consequent public response illuminate neglected features of the Qing economy: elite demand for risky but portable assets and the extent of official reliance on supple domestic financial networks. Taiping-era innovations in currency, credit, taxation, official recruitment, markets, and competition invite a new vision of the 1850s as a pivotal decade in China's protracted but ultimately triumphant quest for prosperity and power. Comparison with the remarkably similar circumstances surrounding the financing of America's civil war highlights Qing success in tapping unsuspected sources of cohesion, flexibility, and resilience amidst the near collapse of central control.

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In 1937, invading Japanese armies quickly separated China's Kuomintang (KMT) state from key revenue sources in the lower Yangzi region. Lacking fiscal reserves, the KMT resorted to large-scale issuance of unbacked paper currency. With production reeling from wartime disruption, monetary expansion led to a tripling of the price level between June 1937 and yearend 1939, a further six-fold rise to December 1941, and subsequent bursts of hyperinflation before and after Japan's 1945 surrender (Chang 1958, pp. 26, 42, 57, 79). Monetary instability was a central element in the KMT's eventual defeat and exile.

Nearly a century earlier, domestic uprisings threatened to topple a Qing regime already in dire financial straits. With central silver reserves at a hundred-year low, Qing officials were ill-prepared when the Taiping uprising broke out in 1850. As the rebellion spread, insurgent armies overran the Lower Yangzi heartland, depriving the Qing of essential taxes and grain. Lacking funds to meet pressing military demands, the Qing engaged in a "desperate scramble" for revenue, issuing debased coins and unbacked paper currencies to pay the salaries of government officials and military personnel (Ma 2012, p. 9). Market turmoil ensued. Prices rose. Some merchants rejected the new currencies; others accepted them only with large discounts.

Historians have dismissed Xianfeng-era (1850-1861) monetary initiatives as "exceedingly inflationary," "unsuccessful right from the outset," "doomed to failure" and "a fiasco" (Horesh 2014, p. 126; He 2018, p. 32; King 1965, p. 144; He 2013, p. 111). Such negative appraisals support a broader narrative of nineteenth-century decline that seeks to explain the collapse of Qing rule in 1911 and the weakness of its Republican successors.

China's eventual political and economic transformation invites reconsideration of such generalizations. Our review builds on three secondary literatures: comparative studies of

late nineteenth-century institutional innovations (Helleiner 2003; Yun-Casalilla and O'Brien 2012; He 2013); archival research into Qing imperial finances (Shi and Xu 2008; Shi 2009, 2014; Chen 2013a; Lai 2014); and analyses from Chinese historians that reinterpret both state and economy following the Opium War (1839-42).Our survey leads in new directions.

Whatever its shortcomings, Xianfeng monetary interventions contributed to the defeat of the Taipings. Indeed, King concludes that monetary innovation "may even have saved the dynasty" (1965, p. 144). Vanquishing rebels in the "largest civil wars in human history" (Halsey 2015, p. 81) enabled a further half-century of Qing rule.

Our review casts doubt upon widely shared perspectives about early nineteenth-century price trends and fiscal weakness during the final Qing decades. Beyond supporting the suppression of domestic insurgencies, Xianfeng-era experiments launched institutional changes, most originating with regional officials, that enhanced China's long-term development prospects. On balance, the consequences of monetary and fiscal innovations, expanded criteria for official recruiting and unprecedented state entry into credit markets strengthened state finances, extended market competition and lowered transaction costs.

These circumstances identify Xianfeng as a transitional period that produced momentous institutional developments, often in embryonic form – innovations that gradually developed into cornerstones of China's long-term economic success. Qing response to the Taiping challenge invites broader comparisons. Domestically, the link between central weakness, decentralization of power and institutional innovation recurs in both imperial and modern China. We find surprising parallels between Xianfeng developments and monetary conditions surrounding America's civil war. Finally, Qing achievement of military mobilization on a scale far beyond contemporary European achievements highlights the contribution of scale, centralization, and unity – often neglected by historians - to pre-modern state-building.

We begin with Xianfeng monetary initiatives, then survey innovations related to public finance, credit markets and official appointments, and conclude by raising wider issues.

Revenue Collapse Spurs Xianfeng Monetary Initiatives

In the decades following Qing defeat in the First Opium War (1839-42), China confronted domestic rebellions that displaced millions, disrupted agriculture and commerce, and diverted tax revenues to military operations (Rowe, 2009, pp. 193-99). The Taiping uprising (1850-64) originated in the southwest but soon expanded into China's Lower Yangzi economic heartland, occupying Nanjing for over a decade. The state simultaneously confronted the Nian rebellion (1851-68), along with Muslim uprisings in the northwest (1862-77) and southwest (1856-73).

The Xianfeng state inherited a tax system suffering long-term decline. The final decade of the Daoguang era (1821-1850) witnessed a "fall in the total legal collection of the land tax" – the pillar of central revenues - involving 398 of 1500 counties in 1846, a number that increased in 1847 and "remained at a high level" for the remainder of the decade (King 1965, pp. 144-45). Archival records show annual land tax collections, which had exceeded 20 million taels[1] throughout the Daoguang era, plunging to 14 million taels in 1851, then dropping below 10 million taels in 1853-54 and 1859-64. Revenue bottomed out at less than 6 million taels in 1861 (Ni 2016, p. 89).

Beginning at the end of the 18th century, weak revenues and rising military costs drained the central state's silver reserves. Table 1 summarizes the Board of Revenue's reported silver inventory between 1722 and 1861. Observations for 20 dates during 1723-95 peaked at over 80 million taels and averaged nearly 50 million. Silver reserves dwindled

[1] The Qing monetary system included many varieties of "tael" (in Chinese, *liang*). The tael represents both bookkeeping units (e.g. the Haikwan tael used to record foreign trade flows between 1874 and 1932) and weights of silver shapes ("shoes") cast by silversmiths as well as broken silver bits. Prior to 1860, the British pound exchanged for 3.3 Shanghai taels (Morse 1910, i: xxxix). Hsiao (1974, pp. 190-92) provides annual foreign exchange rates from 1862-1949.

during the Jiaqing (1796-1820) and Daoguang (1821-50) eras, with the average of eleven annual figures falling short of the minimum reported during 1723-95. Silver holdings fell to 9.9 million taels at the end of the Opium War (1842). Shi (2009 pp. 109-10) notes that "actual circumstances were far more serious" than the declining trend apparent in Table 1.

Payment of the 14.7 million tael indemnity imposed under the 1842 treaty settlement drained central reserves; at the end of October 1850, the imperial treasury held a mere 1.87 million taels. Silver inventories for the Xianfeng years, of which over ninety percent consisted of unbacked paper notes recorded at face value, averaged 1.8 million taels and reached an 1859 peak of only 3.02 million taels (Shi 2009, p. 111).

With an empty treasury and a revenue system "completely incapable of meeting the extraordinary demand" for military spending (Beal 1958, pp. 18-19), the Xianfeng government faced an immediate fiscal crisis. Amid falling revenues, domestic warfare shattered the intricate Qing system of fiscal allotments, transfers and audits (Ulrich 2013, pp. 86-90; Lai 1984). Efforts to commandeer funds from provincial treasuries largely failed. As the rebellion spread, provincial leaders refused to relinquish locally collected revenue and, worse yet, seized official silver shipments transiting their territory (Ni 2016, p. 88).

These disruptions left the Board of Revenue incapable of meeting regular official disbursements. Empty official coffers delayed payment of official and military stipends in the capital, leading to a financial crisis and a run on the capital's banks (Iwai 2011, p. 368; Kaske 2015, p. 355). This breakdown spurred the Board of Revenue to reconsider Wang Liu's much-debated proposals, discussed below, for expanded issuance of official currencies (Rowe, 2010). We discuss new metal coins, then move on to novel paper currencies.

Debased Coinage

The Xianfeng state issued two categories of new coins: "big cash" and iron coinage.

"Big cash" (*daqian*) were copper coins with substantially lower metal content than the traditional "standard cash" (*zhiqian*). Unlike the conventional one *wen* coins, the new issues, first minted in the capital and subsequently in 14 provinces, appeared in multiple denominations, with nominal values ranging from five to one thousand cash (*wen*). The immediate objective was to relieve the shortage of standard coins to meet military needs, including stipends for officers and soldiers. The government profited from the seigniorage as well (Chen 2013a, pp. 617, 631).

Peking merchants discounted or rejected these new coins (Peng 1983, pp. 97-8). As their market valuation deteriorated, the new coins gradually displaced traditional standard cash in the capital.[2]

In the late 1850s, growing issuance of similarly debased coins by provincial mints pushed up commodity prices and contributed to a significant fall in the value of copper relative to silver in some major markets. Peng chronicles reports of steep price increases for flour, salt, rice, coal, tea, pork and other everyday articles in the capital, with "no item exempt from higher cost" (1983, p. 109). "Big cash" circulated within the capital's walls, but sellers in the surrounding rural areas demanded standard cash.

The new currencies disrupted commerce. Merchants from the provinces now sold goods to urban buyers for "big cash," exchanged these coins for cash notes (*baochao,* discussed below*)*, then converted the cash notes into silver. Multiple currency exchanges increased transaction costs, truncating both local and long-distance trade: "goods from the provinces no longer flowed into the city" (Peng, 1983, p. 108; Shi and Xu, 2008, pp. 83-84).

Most of the new coin issues were short-lived: Peng Zeyi (1983, p. 104) notes that production of all but the 5- and 10-*wen* "big cash" halted in 1854 or 1855.

Iron coins (*tieqian*)**.** Following requests from provincial officials, experimental minting of iron coins commenced in 1854, first in Peking and then in six provinces (Chen, 2013a, p.

[2] Peng (1983, pp. 98-99). While this episode appears to reflect the workings of Gresham's law, Kuroda demonstrates that "bad money often worked in concert with good money" (2020, p. 11).

618; Tang and Liu 1987, pp. 58-59). Iron cash fared poorly: people preferred copper, including the debased "big cash" (Peng 1983, pp. 98-99). Issuance halted following an 1858 report that the central mint and several government agencies had accumulated large stocks of iron cash (Tang and Liu 1987, p. 59).

Paper Currency

In 1853, for the second time in its history, the Qing government began to issue paper currency.[3] Both the Board of Revenue and provincial agencies issued two varieties of paper notes: y*inpiao* (also called *guanpiao*), paper money denominated in silver taels, and *qianpiao*, denominated in standard cash.

Silver notes (*yinpiao*, *guanpiao*) were issued by the Board of Revenue and distributed in the capital region through private banks that functioned as "fiscal agents of the Board of Revenue" (King 1965, p. 150). Silver notes appeared in multiple denominations, ranging from one to fifty taels; they were redeemable (at least in theory) in standard cash or silver taels at a discount (Peng 1965, p. 809).

Cash notes (*qianpiao*, *baochao*) denominated in standard cash and backed by "big cash" appeared shortly after the Board of Revenue began minting "big cash." Initial tranches appeared in four denominations, ranging from 500 to 2,000 *wen* (cash); later issues added notes with denominations up to 100,000 *wen*. Official regulations stipulated a conversion rate of 2,000 *wen* per tael between paper notes denominated in cash and in silver (Kaske 2015, p. 356).

Macro-Effects: How Much New Currency? How Much Inflation?

[3] The Qing issued paper money during the conquest period, 1651-1661 (Chen, 2013a, p. 620).

How did Xianfeng currency initiatives affect domestic money supply and prices? Chinese economic thinkers had long understood the inflationary consequences of excessive monetary expansion, including "each of the separate elements required to construct . . . the quantity theory" of money (Hartwell 1971, p. 724).

The Xianfeng reforms increased the money supply. Wartime devastation, disruption of trade and the resulting shift toward self-sufficiency reduced the volume of output and transactions. Although the impact on the velocity of circulation is indeterminate, the combination of a larger money stock and smaller volumes of output and trade leads to an expectation of higher prices.

Peng Zeyi's incomplete tabulation of nominal Xianfeng-era currency issue amounts to 61.29 million taels (1983, p. 115; Chen 2013a, p. 633 notes minor omissions). How does this compare to the pre-existing money stock? Citing an 1855 report by the British governor of Hong Kong, Hamashita places China's stock of monetary silver at "1,200 million taels or about $1,670 million" (1984, p. 391). This is roughly in line with other estimates: He (2007, p. 72) places the 1825 money stock between 0.6 and 1.1 billion taels (or, using the standard conversion equating one Chinese dollar (*yuan*) with 0.72 tael (Hamashita 1984, p. 427)), 0.83-1.53 billion yuan.

Peng Xinwei estimates that various forms of metallic silver occupied 62 percent of China's currency stock at the close of the Qing era (1965, p. 888). Applying the 62 percent share to Hamashita's 1850 silver figure yields a total of 1,935 million taels for the 1850 currency stock (including monetary silver, copper cash, and privately issued paper notes).

The nominal value of Xianfeng-era currency issues amounts to 3.2 percent of this crudely estimated pre-Taiping money stock. Since the new currency issues were widely discounted, their market value was considerably smaller. As a result, even large errors cannot upset the conclusion that the new Xianfeng issues caused only a minor enlargement of the national money supply.

This result contrasts with wartime monetary expansion following Japan's 1937 invasion: during the four years ending in December 1941, the stock of outstanding government bank notes rose nearly tenfold, from 1.64 to 15.1 billion yuan – a huge increase over the 1936 currency stock of 6.6-7.6 billion yuan (Chang 1958, pp. 19, 40; Rawski 1989, p. 395).

How did Xianfeng monetary intervention affect prices? Before considering the data, it is essential to recognize the difficulty of measuring Qing-era price trends. Available price information generally reflects silver values, whereas retail transactions, especially in northern and interior regions, used copper cash. Commodity prices denominated in copper and silver often diverged: while "copper coins suffered serious depreciation relative to silver," local records from one Anhui county show that "coin prices for rice remained surprisingly stable" between 1821 and 1860 (Kuroda 2022, p. 589). Lillian Li finds a similar disjunction in a different region: "wheat prices [in Zhili province, adjacent to Peking] in silver are converted to copper coin prices [using information on the copper: silver exchange rate]. . . . prices in silver and coin diverged dramatically" for several decades beginning in 1838 (2007, p. 135).

Price trends also varied across space. Although Yeh-chien Wang's path-breaking study of Qing grain prices concluded, and subsequent econometric analysis confirms, that "Early eighteenth-century China was, on the whole, comparable with Europe in terms of market integration," Li cautions that, while Qing grain "prices in key regions of China followed broadly similar long-term trends. . . . evidence from Zhili shows that intraprovincial market integration did not follow the same trend" (Wang 1992, p. 52; Shiue and Keller 2007; Li, 2007, pp. 217-219). During the 1850s, while Peking experienced substantial inflation, wheat prices in Baoding, the capital of nearby Zhili, remained quite stable (Li 2007, p. 129).

Wartime disruption multiplies measurement issues. Peng Zeyi remarks that during the 1850s, "regional differences and volatility in the silver: copper exchange ratio created chaos among the multiple prices – silver taels, standard cash, big cash, copper notes – used to transact various commodities" (1983, p. 97). Peking market conditions during 1854 illustrate this increased complexity: (1983, p. 104).

> If using big cash to buy 1000 *jingqian* worth of goods, the cost will rise 200-300 *wen.* If not using big cash, the normal price prevails.
>
> When exchanging cash for silver, each *liang* costs 2600-2700 *wen*; but payment with big cash requires 3100-3200 *wen*.

Even if monthly official reporting of county-level grain prices continued during the Taiping emergency, the injection of non-standard currencies, exchange rate volatility among traditional and new monies, and the expansion of spatial price variation[4] all lessen the value of price observations from central places as indicators of overall market conditions.

Despite the resulting need for caution in interpreting wartime price information from central markets, available compilations allow a plausible description of Xianfeng-era price movements.

Figure 1 shows indexes for rice prices and for a crude measure of general prices covering 1800-1900, both taken from Peng (2006, pp. 172-74) and presented as 3-year moving averages of annual data. Information for rice originates with Yeh-chien Wang's (1992) collection of prices in Suzhou, a national center for wholesale rice transactions. Aside from rice, Peng's general price measure rests almost entirely on prices observed in international trade: cotton and silk prior to 1867; Tang Qiyu's (1926) compilation of prices for 28 import/export goods thereafter (Peng, 2006, pp. 154-63). With strong links between domestic and international commodity prices absent until late in the nineteenth century (Brandt 1985), the connection between border prices and China's domestic economy is tenuous. Even so, Figure 1 shows both series following similar trends.

[4] Lu and Peng's comparison of rice prices in Suzhou and Haizhou (today's Donghai county in northern Jiangsu) during 1740-1910 finds the largest differences during the 1850s (2006, p. 488). The largest divergences in Peng's compilation of annual copper: silver exchange rates for North China (*Huabei*) and for the Yangzi delta region (*Jiangnan*) appear during the Taiping years (2006, pp. 172-74). Chen records copper-silver exchange rates ranging from 1,800 (Yunnan) to 3,000 (Henan) standard cash per tael for 1854 alone (2013a, p. 604).

Xianfeng-era price observations reflect wartime disruption. Because Taiping rebels occupied Suzhou between mid-1860 and late 1863, the rice prices used for 1861-64 come from Shanghai quotations (1862-64) or from unspecified "extrapolation" (1861) (Wang 1992, p. 47). If, as seems plausible, Shanghai rice prices normally exceeded prices in Suzhou's central wholesale market, Figure 1 may exaggerate the 1862-64 price spike.

Setting aside these concerns, Figure 1 shows that the Xianfeng era experienced substantial price volatility. One burst of inflation in 1856-58 raised rice and general prices by 45 and 88 percent; another followed in 1860-61, when rice and general prices jumped by 76 and 36 percent, an upward trend that spilled into the early years of the Tongzhi (1861-1875) reign. Both inflation episodes, however, followed substantial price declines: rice and general prices fell by 45 and 33 percent during the first two Xianfeng years, and by 40 and 25 percent during 1858-60.

These observations point to volatility rather than inflation as the central feature of Xianfeng-era price movements. Despite episodes of sharply rising prices, the peak Xianfeng values of actual Suzhou rice prices (omitting substitute figures for years of Taiping occupation), displayed in Figure 2, fall short of the maximum figures recorded during the earlier Daoguang and Jiaqing reign years as well as the subsequent Tongzhi and Guangxu (1876-1908) eras. From start to finish of Xianfeng, Suzhou rice prices rose by 24 percent and the general price level by 12 percent, figures that would emerge from steady annual price increases of 2 and 1 percent respectively.

Table 2 offers further perspective on the price consequences of the Taiping uprising, summarizing price movements (again using Peng's compilation) for the Taiping years 1851-1864, for the prior and subsequent 14-year periods, and for the entire Daoguang era (1821-1850). The Taiping interval, which includes the entire Xianfeng reign along with the initial Tongzhi years, stands out for price volatility. The Taiping years include both the largest annual price increases and the biggest decreases for measures of both rice and general prices.

The Taiping years also produce the highest inflation figures: the average and the median of annual changes in both price measures are higher during 1851-64 than for any

other period shown in Table 2. This observation, however, is subject to two qualifications. The figures for the Taiping years indicate moderate, rather than rampant inflation. Furthermore, the identification of 1851-64 as the interval with the highest average and median price increases hinges on the accuracy of alternative rice prices for 1861-64, when Suzhou prices vanish from the historical record.

The foregoing discussion focuses on prices denominated in silver. What of price trends denominated in the traditional copper cash that Morse describes as "the currency of the people" ([1908] 1966, p. 167)? Silver dominated China's currency stock and found widespread use in wholesale transactions, interregional trade, and official finance. Beyond the coastal urban centers where high levels of agricultural commercialization and involvement in overseas trade popularized silver money, villagers conducted their economic lives primarily, and often exclusively, with copper coins. Reports that low-level officials imposed distorted exchange rates that elevated the burden of paying silver-denominated land taxes (Luo 2013, pp. 36-45); Zhou 2020, pp. 185-220) imply that many land-owning households had no access to silver – otherwise, they could avoid the excess tax burden by delivering silver to pay their land taxes.[5]

Lacking lengthy series of copper-denominated prices, we follow Li (2007, pp. 135-37) and others in combining annual information on silver-denominated grain prices and copper: silver exchange rates to derive series expressing annual prices in terms of copper cash. Figure 2 shows the results for Suzhou rice prices.[6]

The upper line in Figure 2 shows the annual index of silver-denominated Suzhou rice prices, with 1760/80 set equal to 100. The lower line, linked to the right-hand vertical axis, displays an annual index of these same rice prices, now converted into copper using annual copper: silver exchange rates.

[5] Zhou finds extensive copper payment of Hubei land taxes during the Daoguang and Xianfeng eras (2020, p. 191). A Daoguang-era report by the provincial "governor in the south observed that 80-90 percent of the people . . . paid their land tax in cash" rather than silver (Wang 1973, p. 60).

[6] The Online Appendix specifies omissions due to missing data and explains the transformation to copper values.

The annual index of copper-denominated Suzhou rice prices displayed in Figure 2 incorporates the assumption that copper: silver exchange rates in North China (*Huabei*) closely track comparable rates in Jiangnan – a condition that is violated primarily during 1856-58.[7] This derived series of copper-denominated rice prices yields several unexpected observations.

Illustrating Kuroda's precept that "The presence of an independent local currency mediating exchanges of local products" can often absorb "the extreme instability of price movements in distant trade" (2020, p. 30), copper-denominated prices for Suzhou rice show no sign of the widely discussed "Daoguang deflation" (e.g. Von Glahn 2018, p. 81) visible in the 3-year moving average of silver-denominated Suzhou rice prices (Figure 1), . Copper-denominated rice prices rise during the first few years of the nineteenth century and again between 1830 and 1850; following the defeat of the Taipings, copper-denominated rice prices decline to levels observed during 1815-1830.

Across the entire century, data in the Online Appendix reveal a dominant pattern of stability for the copper variant of Suzhou rice prices. Among 94 annual observations, 62, or just under two-thirds, differ from the century-long median of 167.7 by less than 20 percent; 42 (or 45 percent) of annual observations fall within ten percent of that median. During lengthy intervals, first 1806-1830 and then 1875-1895, annual values of copper-denominated Suzhou rice prices fluctuate within narrow boundaries.

Table 3 presents annual changes in Suzhou rice prices before, during and after the Taiping emergency. Small annual increases in silver-denominated rice prices ranging from 1.4 to 5.8 percent between 1852/53 and 1855/56 - years of peak issuance of new currencies – undermine the view of currency expansion as the driver of inflation. Upward price jumps reported for 1856/57 and 1861/62 (silver) and for 1857/58 (copper), years when substantial

[7] Peng (2006, pp. 172-4) shows exchange rates in both regions for 27 years during 1800-50 and annually for 1862-1900. The difference between the two is less than 10 percent in 53 years and above 10 percent in 13 years. The largest divergences come during wartime. In the Taiping years 1856-58, the North China rate is 44, 41 and 73 percent above the Jiangnan rate. In 1862, the North China rate is 14.6 percent higher, and in 1842, 13.3 percent lower than the Jiangnan rate.

proportions of the new currency issues had already returned to government coffers in the form of taxes or payments for purchase of degrees, offices, or imperial favor, further weaken the link between currency issue and rising prices.

Absence of sustained inflationary pressure of the sort arising from substantial monetary expansion is not confined to the Suzhou rice market. The relative stability of Taiping-era prices for staple grain in far-flung regions: wheat in Baoding, millet in Gansu, rice in Hunan, and grain in Fengtian confirms the absence of economy-wide inflationary pressure (Li 2007, p. 129; Perdue 1992, p. 114; Wong and Perdue 1992, p. 132; Lee, Campbell, and Tan 1992, pp. 160-61).

Rather than sustained upward pressure on prices, systematic evidence from Suzhou's rice markets, along with anecdotal and quantitative information from multiple regions, points to temporary war-related supply disruptions as the chief source of Taiping-era price spikes. Although some reports, especially from the capital, associate new money with rising prices, available evidence points to conscription of men and animals, disruption of trade and transport, closure of markets, and the waves of uncertainty surrounding the ebb and flow of warfare as the chief sources of Taiping-era price fluctuations.

Xianfeng Institutional Changes Foreshadow China's Eventual Modernization

Repetition of large numbers without context (King 1965, p. 150; Horesh 2014, p. 126), together with Peng Zeyi's uncharacteristically rash claim that the response to the Taiping emergency included "unlimited issuance" of currency (1983, p. 96) and Chen's mistaken observation that Xianfeng authorities injected new moneys "without quantitative constraint" (2013a, p. 640), create an erroneous impression of imperial authorities blindly flooding the economy with vast currency injections. The modest scale of Xianfeng currency intervention increased transaction costs and price volatility, but produced nothing remotely approaching "hyperinflation" (Horesh 2014, p. 127).

The Qing response to the Taiping uprising extended far beyond monetary innovation. The 1850s brought changes in official institutions, imperial policy, and private commerce that dwell in the shadows of many historical accounts. Focusing on these circumstances encourages a new vision of Xianfeng as a pivotal decade in China's lengthy and turbulent, but ultimately successful pursuit of economic growth and, through it, of military power. The following pages review innovations surrounding money, finance, taxation, official recruitment, and market structures.

First, however, we show how Xianfeng developments highlight important structural features of the Qing economy – currency circuits and risk tolerance.

Xianfeng Events Illuminate Enduring Features of the Qing Economy

Developments during the 1850s illustrate multiple features of Kuroda's penetrating analysis of the commercial geography of pre-modern monetary systems. Kuroda observes that, with multiple moneys circulating in overlapping domains, particular currencies circulated within distinct boundaries (2005, 2008, 2020). The dimensions of these "currency circuits" were often spatial, as when "circulation of the notes of private banks is limited to the radius of credit of the issuing bank" (Morse [1908] 1966, p. 143). Demarcations could also be commercial, with a particular currency dominating physically dispersed transactions surrounding the procurement, transport, and sale of specific commodities, as illustrated in an 1850 Hong Kong commentary (*Hong Kong Blue Book* 1850, section on "Coins, Exchanges, &C."):

> The Chinese are as capricious as ever in demanding almost exclusively the old chopped Spanish Dollars particularly in payment for tea. These Dollars are constantly diminishing without any influx . . . so that their comparative scarceness coupled with the unusually large amount of specie required last season for the purchase of tea, has placed them at a considerable premium in the Canton market with reference to sterling

Currency circuits continued long after the Taiping emergency; during the early 20th century, traders used different currencies to exchange tea, tobacco and yarn in Jiujiang, an interior river port (Kuroda 2008, pp. 18-19). The Xianfeng 10-*wen* "big cash" coins issued during the 1850s "took no hold in the provinces and may be said not to have entered into the currency system of the Empire, except that, curiously enough, in Peking itself, though not in the province of Chihli [Zhili], immediately around it . . . [these new coins] found immediate adoption," a circumstance that persisted for several decades (Morse [1908] 1966, p. 12).

Officials in Peking clothed the new Xianfeng currencies in the vestments of private business, evidently hoping to capitalize on the widespread market acceptance of private financial instruments. "When the government . . . issued paper notes in 1853, it called them *yin-p'iao* [silver notes] and *ch'ien-p'iao* [cash notes], the same names as the notes previously issued by the private concerns" (Hao 1986, p. 47).

Anticipating the *guandu shangban* system of the 1870s, in which state officials supervised mercantile managers of government-sponsored enterprises, policymakers enlisted private merchants to operate semi-official financial agencies intended to broker exchanges between new issues, traditional copper cash, monetary silver, and their own promissory notes (Chen 2013a, pp. 623ff). The provinces quickly followed suit (Peng 1983, p. 93). These efforts to encourage wide acceptance of new issues failed, apparently because official backers were unable (and private operators were presumably unwilling) to provide the new agencies with sufficient stocks of silver or standard cash to support confidence-inducing exchange operations.[8]

Officials took concrete steps to stimulate demand for the new currencies. Allowing partial payment of taxes in "big cash" or paper notes achieved limited success because lower-level governments often demanded tax payment in metallic silver or standard cash, then purchased new currency at discounted market rates for inclusion at face value in remittances

[8] Peng refers to the market preference for privately issued notes (1983, pp. 98-99). Discussing new currency issuance in 1905, Zhang Zhidong, a prominent reformist official, emphasized that, to avoid punishing market outcomes, "The exchange of *piao* [the newly issued currency] for cash by the public cannot be restricted" – as surely occurred during the Xianfeng emergency (Chen 2013a p. 664).

to higher authorities (Shi and Xu 2008, pp. 77, 89-90; Chen 2013a, p. 637). Xianfeng-era inventory data from the *Hubu* treasury indicating that silver-denominated paper notes (rather than physical silver) accounted for over 90 percent of recorded "silver" holdings demonstrate the extent of such manipulations (Shi 2009, p. 111).

To further enhance demand, the Qing state invited well-to-do citizens to include the new currencies in payments accompanying applications for grants of personal privilege. Two long-established systems – *juanna,* which allowed the purchase of official degrees normally conferred following success in the imperial examinations, as well as bureaucratic ranks and even official appointments; and *baoxiao,* which enabled offenders to lighten or deflect punishments in return for monetary contributions – had become a routine means of raising funds to meet the expense of military campaigns. Taiping fiscal demands prompted central and provincial governments to expand both programs.

Even though competition among provincial *juanna* operations lowered purchase prices for degrees and offices and raised the allowable share of new currencies in individual submissions, these systems generated substantial revenues (Kaske 2013, p. 345). Office-selling was "the major way to withdraw silver notes after they had been distributed as salaries" (Kaske 2015, p. 357). Purchase of titles and degrees was a thriving business: firms in Beijing (and presumably in provincial capitals) offered consulting services to guide applicants through the maze of documentary and financial requirements (Wu, 2000).

These arrangements reveal the complexity and sophistication of Qing-era private financial networks. How could the state issue potentially suspect new currency to officials and even to armed soldiers in wartime, knowing that rejection of the new issue by local merchants could spark deadly mayhem? To reduce these risks, officials provided advance notice to local money shops, limited the volume and geographic scope of initial note circulation, created government agencies to oversee the new currency, and opened multiple financial outlets to facilitate exchange operations (Chen 2013a, pp. 622-24) – all aimed at ensuring that when soldiers found the new notes included in their pay, money changers

would willingly buy up the unfamiliar currency – to be sure, at a discount – a familiar transaction for any but the most insular Chinese citizen.

How did prospective purchasers of title and office acquire "big cash" and paper notes following their initial delivery to incumbent office holders, military contractors and individual soldiers? While we can easily visualize social networks linking current office holders with prospective *juanna* and *baoxiao* applicants, personal ties between such individuals and military contractors or soldiers seem improbable.

While invisible in the documentary record, the observed chain of events implies that, even amidst the confusion of war, private mercantile networks rapidly bridged the social and spatial gaps separating recipients of the new monies with prospective purchasers. Establishing these new currency circuits meant moving funds in physical form or in suitably denominated financial accounts from (perhaps widely dispersed) points of initial payment into the (often distant) hands of taxpayers or would-be purchasers of degrees, offices, or imperial favor.

Also operative is the long-standing willingness of prosperous Chinese to acquire and hold risky assets – a category that surely includes favors bestowed or promised by a tottering dynasty. Chinese elites invested heavily in Confucian education for their sons – even though the chances of advancement through the formidably competitive imperial examination system were vanishingly small (Elman 1991, p. 14; 2000, Tables 3.4-3.6 and 3.20).

Ming-era (1368-1644) efforts to raise revenues by manipulation of salt certificates provide further evidence of elite willingness to accumulate risky assets. Many individuals retained these certificates, which entitled holders to queue up for (possible) allocations of physical salt, for decades, even after the throne had demonstrated its willingness to invalidate some outstanding certificates (Puk, 2016, pp. 41, 45-46).

Academic degrees, imperial favors and salt certificates represent sources of wealth that, unlike land and traditional metal currency, were both portable and widely recognized – valuable features during a political upheaval that uprooted many millions (e.g. Esherick 2011, chap. 1).

These observations show that Xianfeng officials, either consciously or instinctively, channeled their efforts to promote the circulation of unbacked new monies in directions that, by enlisting long-standing patterns of market behavior, bolstered their chances of short-term success.

Money

Colorful treaty-port descriptions of complex and confusing Qing monetary arrangements overlook the reality that "Only in the nineteenth century did territorially uniform and exclusive national currencies begin to emerge for the first time in world history" (Helleiner 2003, p. 31). Circulation of multiple currencies without uniform standards, widespread use of foreign coins, intermingling of standard coins with debased or counterfeit tokens and fluctuating exchange rates between high- and low-denomination money figured prominently in the monetary history not only of Qing and Republican China, but also of eighteenth-century century Europe and the ante-bellum United States.

In Europe, "a mixture of foreign and domestic currencies was the rule"' before the nineteenth century. England's "Royal Mint reported in 1787 that only 8 percent of the copper coins in circulation resembled the king's coin." In the United States, "foreign silver coins – primarily Mexican and Spanish currency – formed the bulk of the domestic coinage up until the 1850s," supplemented by "as many as ten thousand different types of paper notes" (Helleiner 2003, pp. 21 (quoting Fernand Braudel), 24, 29).

For nearly two centuries prior to the Taiping upraising, Qing monetary policy consisted of little more than minting traditional copper cash – round 1-*wen* tokens with square center holes – that circulated in loose form or in strings, nominally containing 1,000 coins (*wen*). Periodic efforts – mostly ineffectual - to restrict issuance of private notes, to combat counterfeiting of copper cash, and to adjust mint production in the hope of influencing the copper-silver exchange, rounded out the state's contribution to a currency system involving plural monies: silver bullion, Spanish and Mexican silver dollars, imperially minted (and privately counterfeited) copper cash, local bookkeeping currencies, non-metallic

commodity monies (silk, opium), notes of private banks and shops, and, beginning in the late 19th century, notes issued by foreign banks (Wang 1979, p. 441; Shi and Xu 2008, p. 76; Hao 1986, p. 43; King 1965, pp. 138-39; He 2013, p. 34).

Around 1830, Wang Liu, the scion of a gentry family with a long-standing interest in monetary matters, challenged this non-interventionist equilibrium by proposing a state-managed system that would nationalize all forms of metallic silver, replace metallic silver currency with officially issued paper notes, eliminate private note issue, and supplement the new silver currency with copper coins minted in multiple denominations (Lin 2006, pp. 149-52).

Wang's proposals, which William Rowe sees as envisioning "the adoption of a true *national currency* . . . whose value will be determined by the state" (2010, p. 86), illustrate the sophistication of Chinese economic thought, in which "Economic ideas from the West played a negligible role" (Lin 2006, p. 181). Although their implementation would have placed China near the forefront of global monetary practice, Wang's ideas sparked spirited debate but no immediate action (Lin, 2006, pp. 172-82; Rowe, 2010, pp. 73-86).

Beginning in 1853, however, the issuance of both silver-denominated paper notes and "big cash" coins in multiple denominations bore the unmistakable imprint of Wang's thinking. These initiatives reflected the popularity of privately issued moneys, "promissory notes denominated in copper coins" which "money exchangers, pawnshops, and even sellers of rice and salt in cities often issued" during the early nineteenth century. Replying to queries from the capital, provincial governors mostly "confirmed the importance of private notes to the economy" (He 2013, pp. 135-36).

Although few of the new Xianfeng currencies achieved wide acceptance and most soon vanished from circulation, these reforms deserve recognition as initial steps toward the eventual achievement of a stable and convenient national currency that would eliminate the

periodic exchange-rate fluctuations and staggering transaction costs inherent in the Qing-era copper-silver system.[9]

Taiping-era decentralization endowed provincial leaders with unprecedented autonomy and authority. During the 1880s, Zhang Zhidong, as governor first of Guangdong and then of Hubei, took the lead in currency reform, equipping provincial mints with imported machinery capable of producing large quantities of standardized silver coins. Following an imperial edict ordering the provinces to establish facilities for minting traditional copper cash, Zhang obtained permission to manufacture silver dollars. The Guangzhou mint, with "over ninety coin presses . . . became the largest coinage facility in the world" (Dean 2020, p. 49). Although the mint's silver dollars fared poorly in local markets, its subsidiary silver coins found ready "demand along the China coast" and "soon replaced" subsidiary coinage issued in Hong Kong. King hails these as "China's first modern silver coinage," and concludes that the Guangzhou mint's "survival marks the beginning of modern Chinese monetary history" (1965, pp. 225-26).

Financial Markets

Xianfeng-era changes in provincial financial arrangements gradually deepened the central Qing state's involvement in both international and domestic finance.

Beginning in the seventeenth century, Chinese involvement in overseas trade and migration, mediated through the Canton trade with European partners, the coastal junk trade, and the circulation of migrants within an expanding network of Asian ports, familiarized growing numbers of Chinese with European commercial practices. Well before the Opium War and the creation of treaty ports, Chinese merchants experimented with commercial insurance, invested in overseas financial markets, and pursued defaulting foreign partners in overseas courts (Wong 2016, chap. 6; Grant 2012 pp. 73-94).

[9] To illustrate: around 1900, forwarding tax revenues from one province to another required "nine exchange transactions, each of which will yield a profit [at the expense of the transacting parties] of at least a quarter of one percent" (Morse [1908] 1966, p. 84).

The growth of credit transactions between Chinese merchants and foreign business partners was particularly important. Towering domestic interest rates, which Downs (2014, pp. 86, 88) describes as "probably the highest in the world," encouraged foreigners to extend loans to Canton-based Chinese traders. Chinese merchants, no strangers to commercial credit, welcomed the injection of new funds into the capital-scarce domestic economy.[10] Qing regulations requiring the entire body of Canton's Cohong to reimburse foreign lenders for any single member's default reduced the risk of foreign loans to Cohong members (Grant 2014, pp. 64-71).

Unlike private merchants, the Qing state participated in financial markets only as a creditor. The Imperial Household Agency (*neiwufu*) operated pawnshops for the express purpose of earning profits from moneylending; it also provided favored "state merchants" with substantial loans for "operating capital" and extended "loans to salt merchants and others in order to earn interest" (Torbert 1977, pp. 95, 106, 114). In addition, the throne occasionally allowed salt merchants and others to extend their fulfillment of financial obligations over periods that could extend into decades – effectively granting credit to these individuals (Lai 2014, pp. 155-71, 208-16).

While the Qing state purchased grain, horses, fodder, and transport from private vendors, especially in connection with military campaigns (Ulrich 2013, pp. 206-11), imperial officials vehemently opposed the purchase of private-sector financial services. The Qing followed "the axiom that military expenditure had to be covered . . . out of government revenues, and not with the help of credit"; opposition to borrowing and incurring interest costs "ran deep in Chinese government circles" (Ulrich 2013, p. 99; Kaske 2015, p. 387).

Rather than borrowing, the Qing responded to fiscal emergencies by extracting forced contributions from salt merchants, members of the Canton Cohong and other beneficiaries of imperial policy, and selling imperial favors – degrees, offices, and forgiveness – to willing

[10] Capital scarcity contributed to the tendency of Chinese businesses to construct supply chains involving exchanges between numerous participants, an arrangement that facilitated rapid recovery of invested funds. In the early twentieth century, Amano (1941) found that rice shipments from rural Anhui producers passed through more than 60 firms en route to consumers in nearby Shanghai.

individuals (Ulrich 2013, pp. 105-12; Chen 2013b, pp. 332-39; Kaske, 2008, 2011). Houqua, a leading Cohong merchant, entrusted assets to American mercantile partners to escape "the prying eyes of Chinese officials who were eager to tap into his wealth to help pay for the Opium War"; during the 1850s, his heirs were subject to "forced loans" (Wong 2016, pp. 177, 182).

The center's refusal to employ private financiers extended to interregional fund transfers. The dominant role of metallic money necessitated frequent movement of funds – invariably in the form of metallic silver – across space. Silver was heavy – "one thousand taels of ingot silver could weigh 70 pounds" (Wang 2021, p. 28). Silver shipments, "usually escorted by private armed guards," were costly, difficult to conceal and therefore risky: Hao's review of late Qing "homicide cases . . . shows that travelers were often murdered because their boatmen or bearers had guessed . . . that they were carrying silver bullion" (1986, p. 56).

To limit the volume and distance of silver shipments, the Board of Revenue often instructed provincial governors to retain some of the funds earmarked for delivery to Beijing. Nonetheless, frequent silver transfers were unavoidable, especially following irregular occurrences like military emergencies or natural disasters. The Board of Revenue rejected an alternate method of limiting shipments of physical silver: entrusting silver transfers to private financial agents – the 'native banks' (*qianzhuang*) and, beginning in the nineteenth century, the "Shanxi banks' (*piaohao*), which specialized in transferring funds across space without shipping physical silver.

As in Europe and elsewhere in Asia, private remittance agencies avoided physical currency shipments by balancing inflows and outflows from individual nodes within their networks. While limiting the cost and risk of moving physical silver, remittance specialists collected fees for such transfers and for converting funds among different varieties of physical silver and tael units of account.[11]

[11] When provincial officials had difficulty obtaining the *kuping* silver ingots required for delivering tax funds to the Board of Revenue, the *piaohao* solved the problem by accepting multiple forms of silver and providing the officially sanctioned ingots in Beijing (Wang 2021, p. 91).

Despite rapid nineteenth-century growth of the Shanxi banks, the Board of Revenue consistently demanded delivery of funds via overland shipment of standard silver ingots (*weijie*), while opposing provincial governments' use of the private sector's "cashless speedy. . . remittance drafts." Provincial authorities evidently defied central instructions: in 1828 and again in 1848, officials were punished for using private remittance services. Following the latter episode, the court "reimposed a strict ban on using private financiers to remit government funds to Beijing" (Wang, 2021 pp. 12, 86-7).

Fiscal and transport disruptions stemming from the Taiping uprising forced the center to relax these restrictions, even though continued high-level opposition meant that "very few officials dared to employ private financiers . . . to remit tax revenue and government funds" (Wang 2021, p. 87). In 1862, the Court allowed revenues sent from the southern provinces of Guangdong and Guangxi to utilize new routes or to "employ merchants to remit the money" in order to "prevent further delay of tax submission" (Wang 2021, p. 88). Other provinces, especially in the south, took advantage of this precedent: remissions of official funds through *piaohao* reached a record level of 1.39 million taels in 1863. "Major campaigns in 1864, 1876, 1885, and 1899 against provincial governments' persistent reliance on private financiers to handle and remit taxation . . . all failed." The number of official memorials mentioning *huijie* or *huidui* (indicating transactions involving private financial agents) jumped from 177 during Tongzhi to 3,245 during the Guangxu era (1875-1908; Wang 2021, pp. 88-90).

Provincial governments' dealings with the *piaohao* extended beyond silver shipments. When provincial treasuries found themselves short of cash, "private financiers . . . agreed to remit the assigned taxes in advance in the form of short-term loans" (Wang 2021, p. 92). The Taiping emergency prompted provincial officials to seek loans from foreign merchants, first in Jiangsu, where provincial officials borrowed 3.4 million taels between 1853 and 1863, much of it to finance the procurement of marine vessels to support the anti-Taiping campaign. Leaders in Fujian and Guangdong soon joined in (Shi and Xu 2008, pp. 190-93, 201-02).

Informal arrangements governed these early transactions. In 1857, the British Consul in Fuzhou publicly sought advice from "British residents" on a request from "high Chinese authorities at this place" for "a loan in the amount of five hundred thousand taels of silver, which will have interest at the rate of three per cent, per mensem," secured against customs duties at Fuzhou and elsewhere (Morse 1910, i: 532). Zuo Zongtang, a pioneer in this area, relied on intermediation from Hu Guangyong, a Hangzhou-based private banker, for help "in taking out loans from HSBC" [Hongkong and Shanghai Banking Corporation] as well as "delivering money, grain, and medicine for troops, and procuring Western arms" (Shi and Xu, 2008 pp. 202-04).

Foreign lending expanded modestly during the 1870s and 1880s, with regional magnates serving as key figures on the Chinese side: Zuo Zongtang, Zhang Zhidong and Li Hongzhang appear as principals in 15 of 29 non-military loans arranged between 1867 and 1888; military loans were "mainly contracted by the local governors" (Hou 1965, p. 23). Despite frequent recourse to Maritime Customs revenues – nominally under central control - as security for loan repayments, the imperial authorities remained in the background: "Before 1895 . . . the Chinese government showed no dependence on foreign banks or money markets" (Remer [1933] 1968, p. 119).

Japan's victory in the 1894-95 Sino-Japanese war confronted the Qing with immediate payment of "an indemnity amounting to 100 million taels," a sum greater than "annual revenue of 89 million taels," making large-scale foreign borrowing unavoidable (Hsu 1980, p. 110). Resolution of the 1900 Boxer uprising imposed even larger indemnity payments, deepening the Qing state's involvement with international finance: while foreign loans contracted prior to 1894 totaled 8.8 million taels, overseas borrowing exploded to 746.2 million between 1894 and 1911 (Shi and Xu 2008, pp. 202-04; Feuerwerker 1980, p. 65). The center's quest for funds included "an attempt to float a public domestic loan – China's first – in 1898" (Feuerwerker 1980, p. 66). Here again, central initiative followed provincial experimentation, notably Taiping-era efforts in Shanxi, Shaanxi and Guangdong, among

others, and Sichuan tax advance loans dating from the late 1860s (Shi and Xu 2008, pp. 96-99; Kaske 2019, pp. 256-63).

Taxation

After stagnating during the first half of the nineteenth century and falling steeply at the start of the Xianfeng reign, the revenue of the central Qing state achieved a remarkable turnaround. New taxes targeting domestic and foreign commerce, both established during the Xianfeng years, powered this unexpected fiscal revival.

A large secondary literature examines these new taxes. On the domestic side, imposts on commerce known as *likin* (also *lijin*), first levied in 1853, represented a significant new revenue source, especially for local and provincial administrations. The Imperial Maritime Customs Service, founded in 1854 as a foreign-staffed agency to collect duties on foreign commerce, delivered significant and growing revenues to central government coffers (Hsiao 1974, pp. 132-33).

This fiscal revival reflected the accumulation of provincial and local power during the Taiping uprising. Although we lack reliable information about total *likin* collections, Halsey comments that *likin* revenues supported local military operations in much of south and central China by 1855 and continued to increase in the ensuing decades (2015, chap. 3). As noted above, provincial magnates frequently tapped Maritime Customs revenues under nominal central control.

Xianfeng-era fiscal decentralization powered the expansion and restructuring of Qing taxation during the ensuing half-century. While inconsistencies among sources and uncertainty surrounding the amalgamation of disparate revenue streams preclude exact comparisons, the changes are so dramatic that available data can provide a clear overview.

Table 4 shows that the central government's nominal tax revenue doubled between the 1840s and the 1880s. Since silver-based indexes of Suzhou rice prices and of a wider array of prices were lower during the 1880s than in the 1840s (Figures 1 and 2), these nominal figures may understate the central state's growing command over resources: Ma

finds that the central government's per capita fiscal revenue, measured in grams of silver, rose by more than 100 percent between 1800-49 and 1850-99 (2014, p. 489).

Fiscal expansion coincided with sweeping restructuring. Revenue from taxing land and salt and from a long-standing network "no more than 30" internal customs posts (Iwai 2011, p. 114) - the bulwarks of the traditional Qing fiscal regime – hardly changed between the 1840s and the 1880s. As a result, the share of revenue from these levies dropped sharply.

With central revenues doubling amidst stable contributions from leading traditional revenue sources, it was Xianfeng-era innovations - *likin* taxes on domestic commerce and the foreign controlled Maritime Customs - that propelled the center's fiscal expansion. Table 4 shows that over three-fourths of increased central fiscal income originated from these new sources, which contributed an average of 38.6 percent of overall central fiscal income during 1885-89.

The remaining 10 million taels of incremental tax revenue came from the "other" category, which contributed less than 4 percent of central revenues prior to 1850 but accounted for 7-17 percent of the total during 1885-89 (Table 4). Rapid expansion after 1850 of the numbers and proportion of office holders who entered government service by purchasing qualifications, offices, or both, discussed below, points to the *juanna* system as a substantial source of expanded revenue in the "other" category (Luo 1970, i: 6-7).

Beyond the doubling of central revenue, abundant evidence points to large post-Taiping increases in provincial and local tax collections. Wartime erosion of imperial monitoring capacity surely encouraged sub-national actors to channel increasing flows of revenue to promote their institutional (and personal) interests. Slashing contractual salary and stipend payments to subnational officials – a traditional response to fiscal emergency that reappeared during the Taiping uprising (Chen 2013b, p. 279), must have intensified provincial and local revenue-seeking efforts.

Sub-national governments benefited from the evolution of both traditional and novel taxes. The composition of land tax receipts shifted toward surcharges, which flowed mainly

into local coffers; Wang finds that the share of surcharges rose from 26.5 to 64.9 percent of land tax collections between 1753 and 1908 (1973, p. 80).

Once initiated by local governments in 1853, *likin* taxes on commodity shipments spread quickly. Provincial governments rebuffed the center's post-war efforts to monitor and control these revenues (Iwai 2011, pp. 114-21, 371-3). Official documents paint an improbable picture of static *likin* proceeds over several decades (Shi and Xu, 2008, p. 121). In reality, higher *likin* rates (Shi and Xu, 2008, p. 118), rising silver-denominated commodity prices after 1882 (Figure 1), growing domestic commerce (Wu 1985, pp. 100-38; Yan 2007, i: 256). and the deployment of provincial *likin* receipts to finance new offices, agencies and a variety of Westernizing reforms all suggest that provinces retained large flows of unreported revenues.

Official Recruitment

Historians have long overstated the importance of academic success within the Qing civil service. Recent accounts reveal that financial contributions could increase individual prospects at every stage of the career ladder: qualification for office, eligibility for actual appointment, and ranking on lists for assignment and promotion (Zhang forthcoming).

During the Taiping emergency, military necessity and growing foreign interaction prompted a lasting expansion of non-traditional access to official posts. As with new monetary, financial, and fiscal arrangements, innovation clustered at the provincial and local levels.

With regime survival in peril, provincial leaders employed military success as a key criterion for personnel decisions. Military achievement brought many individuals into the orbit of prominent officials, opening the door to merit-fueled careers (Reynolds 2014, pp. 149-50, 229):

> Ding Richang is a prime example of a late Qing Chinese rising by merit to leadership positions [including the governorship of Jiangsu province] from outside the normal . . . path through new avenues of advancement. . . .[Ding] successfully organized local militia. . . then rose to high administrative posts.

> Zhang Yinhuan, Chinese Minister to the United States, Spain, and Peru, 1886-89. . . . [was a] failed candidate for the lowest level examination. . . [who] opted to purchase a . . . degree in 1864 . . . . [then] proved himself with military victories [subsequently] . . . . Moving quickly up the ranks by merit . . .

Because the growing importance of technology, international business and interaction with foreigners required skills that typically exceeded the capacity of incumbent officials, "it fell to . . . holders of official titles and rank by purchase . . . or by recommendation from above - to meet the state's highest new needs" (Reynolds 2014, p. 39). As in the military sphere, new recruitment patterns were most evident at the sub-national level. Jiangsu Governor General Zeng Guofan deputized Yung Wing, the first Chinese Yale graduate, to procure American equipment for the new Jiangnan Arsenal (Yung 1909, p. 168). Li Hongzhang, another powerful provincial magnate, surrounded himself with a retinue of "able men . . . both Chinese and foreign. . . .[including] Sheng Xuanhuai, Zheng Guanying, and other entrepreneurial types, who had purchased official titles . . . qualifying them for appointment to higher posts" (Reynolds 2014, pp. 95-6).

While the share of central officials holding purchased degrees remained low, such men become increasingly prominent among the more numerous officials outside the central bureaucracy: beyond the capital, the share of officials holding purchased degrees increased from 30 to 50 percent between 1830 and 1869 (Chen et al. 2020, p. 27). By 1906, the number of expectant officials qualified via contributions rather than examination achievement reached 257,600 – more than six times the official maximum of 40,000 (Iwai 2011, p. 120).

Xianfeng-era expansion of novel pathways toward elite status contributed to a broad transformation of China's intellectual landscape (Elman 2005, pp. 89-90):

> A new group of artisans, technicians, and engineers emerged between 1865 and 1895 whose expertise no longer depended on the fields of classical learning monopolized by the customary scholar-officials. Increasingly, they were no longer subsidiary to the dynastic orthodoxy or its official representatives.

The rise of new elites stimulated growing interest in modern (as opposed to traditional Confucian) education, especially among populations connected to maritime commerce and overseas migration, decades prior to the abolition of imperial civil service examinations in 1904. Yung Wing, describing his efforts to recruit candidates for the 1872 Chinese Education Mission to the United States, writes that "All the applications came from the Canton people, especially from the [coastal, externally oriented] district of Heang Shan. . . . nine-tenths of the [eventual participants] . . . were from the south" (1909, p. 186).

Markets and Competition

Under Qing rule, as in today's China, unconstrained state authority compelled all but the smallest businesses to seek official cooperation and support. Alliances linking merchants and officials steered market opportunities toward favored clients while obstructing competition from interlopers.

Examples abound. During the 1860s, Governor-General Zuo Zongtang designated the banker Hu Guangyong, who, as noted above, had assisted him on multiple occasions, "not only as the tax transmitter for the Fujian and Zhejiang Customs but also as the custodian of silver bullion on behalf of provincial treasuries," an arrangement that continued beyond Zuo's term in office (Wang 2021, pp. 96-7).

During the same decade, an attempt by Jardine's, a prominent British trading firm, to initiate mechanized silk reeling failed because opponents prevented the fledgling firm from acquiring silk cocoons: the project manager reported that

> The mandarins were bribed to oppose me, people and brokers, more or less in the hands of the silk hongs [companies] frightened from me, suitable houses were refused me or set fire to, and what I actually built was pulled down and the Chinamen that did assist me were put in chains (Brown 1979, pp. 561-2).

Beginning in 1850, rebel advances shattered mutually supportive business-official networks across wide areas, including segments of the Lower Yangzi commercial heartland.

When imperial forces prevailed, the influx of new officials, many, especially in the rapidly growing *likin* system, with mercantile backgrounds, reinforced the erosion of prewar business networks (Miles 2021). As with official recruitment, treaty port developments complemented domestic changes: "transit passes," established under the 1858 Treaty of Tientsin (Tianjin) to exempt foreign businesses from internal taxes on imported goods, created loopholes that enabled Chinese merchants to circumvent entry barriers arising from merchant-official combines (Motono 2000, chap. 2).

Newcomers built their own networks in the hope of creating profitable niches and obstructing potential rivals. Without knowing the outcome of this cycle of network disruption and creation, we may speculate that the growth of foreign and domestic commerce, the expansion of foreign privilege, the opening of new treaty ports, and the decline in transaction costs following the advance of steam shipping, commercial banking, telegraphic communication, and rail transport, all tended to undermine existing trade barriers and therefore to enhance market competition.

At the very least, it seems likely that the instability and innovation unleashed by the Taiping uprising, the Xianfeng-era response and growing foreign involvement increased the pace of market entry and exit as well as the rise and fall of domestic commercial alliances. We may therefore postulate a considerable acceleration in the pace of change across the China's domestic commercial landscape during the second half of the nineteenth century.

Conclusion

Historians have portrayed Xianfeng-era economic policy as a largely futile response to spreading rebellion that delivered steep inflation without boosting imperial revenues. We offer strikingly different observations. While small currency injections created local monetary disturbances, most notably in the capital, neither currency debasement nor

monetary expansion induced sustained upward pressure on prices. Annual price spikes in 1856/57 and 1860/62 coincide with periods of declining production and circulation of the new currencies. They appear to reflect war-related supply disruptions rather than increases in the money stock.

Xianfeng monetary initiatives, developed and implemented under emergency conditions, failed to achieve many short-term objectives but, perhaps surprisingly, succeeded in some. Despite this mixed outcome, modest income from seigniorage, along with ad hoc efforts to finance military procurement and pay officials and soldiers, contributed to the eventual imperial triumph. Above all, the Xianfeng currency innovations bought time that allowed provincial leaders to mobilize, finance and equip the armies that eventually crushed the rebels.

Xianfeng monetary operations reveal an experimental bent within Qing officialdom: near-simultaneous issue of copper, iron and paper currency in multiple denominations and locations prefigures 20th-century policy experimentation (Heilmann, 2008). This agenda reveals a clear grasp of monetary fundamentals within the Qing central bureaucracy. Recognition of elite households' willingness to accumulate risky assets and appreciation of private financiers' swift embrace of new opportunities enabled Qing bureaucrats to design systems that encouraged private operators to act in directions that promoted key policy objectives.

Central weakness arising from the "desperate need of funds" (Beal, 1958, p. 4) under extreme military emergency spawned a flurry of local innovation that, along with contributing to the defeat of Taiping insurgents, advanced China's protracted but eventually triumphant quest for prosperity and power. New taxes on domestic and foreign commerce opened the door to rapid expansion of both central and sub-national fiscal revenue. Monetary reforms, although mostly short-lived, initiated a transition that eventually replaced the burdensome bi-metallic currency with standardized money that was both portable and countable. State involvement in financial markets gradually extended to include the purchase, as well as the provision of credit and financial services. The demands of civil war, foreign

pressure and new technologies widened entry into official ranks. Although enlarging the (already substantial) role of money in the recruitment and promotion of public officials may have deepened official corruption, extending eligibility for official appointments to individuals with new varieties of expertise and (subsequently) advanced overseas training delivered important long-term benefits.

The near-collapse of central power opened the door to lower-level initiatives that gradually spread into the central government and across China's vast landscape. Xianfeng-era innovations – including *likin* taxes on domestic trade, government borrowing from foreign lenders, and installation of soldiers, technicians, and entrepreneurs in official positions – emerged from provincial and local initiatives.

Xianfeng is one of multiple historical episodes in which central weakness opened the door to economically beneficial innovation. Zurndorfer writes that "the first stage of widespread cotton cultivation . . . occurred in the south, far away from . . . central government control" in "the waning years of the Tang dynasty [618-907 AD] . . . when . . . central . . . revenues in silk cloth were severely reduced through loss of authority over silk-producing regions" (2009, pp. 45-6). More recently, Chinese agriculture shifted rapidly from collective to household cultivation despite central directives that explicitly prohibited household cultivation (Brandt and Rawski 2022, ii: 803).

This review invites reexamination of widely accepted generalizations about China's nineteenth-century economy. Quantitative evidence raises questions about the extent and consequences of the "Daoguang deflation." While silver-denominated rice prices at Suzhou, the empire's largest rice mart, show a mild downward trend (Figure 1), the average and median of annual price changes for Suzhou rice and for a (crudely assembled) measure of broader price changes during the entire Daoguang era are uniformly positive (Table 2). Converting Suzhou rice prices to copper (Figure 2) eliminates any hint of a downward price trend.

The disparate trajectories of prices measured in silver and copper raise wider questions. How did the fluctuation of silver-denominated rice prices in distant wholesale

venues affect the millions of households that grew, exchanged, and consumed rice but rarely touched silver? How did changes in the relative value of silver and copper currency affect the copper-denominated prices, wages and costs that framed the economic lives of most Chinese?

Taxation stands out as the sole area in which Xianfeng policy innovation enjoyed immediate success. The doubling of central government revenue between 1849 and the mid-1880s, followed by a further tripling between the mid-1880s and 1910 (Table 4) invites reconsideration of Perkins' observation that Qing-era governments "could not. . . afford to spend much money on modernization of any kind" (1967, p. 478). Might the combined total of central and sub-national fiscal revenues have reached ten percent of overall GDP during the final Qing decade – exceeding the achievements of 20th-century Republican administrations?

China's 19th-century economic history reveals unexpected parallels with contemporaneous events in the United States, where the Civil War coincided with the final years of the Taiping uprising. As in China, domestic rebellion presented the U.S. government with a frightening concatenation in which huge spending demands confronted an empty treasury, diminished revenue flows, and an ineffectual standing army (Lowenstein 2022, pp. 22, 33). Both governments issued unbacked paper currency – to the dismay of orthodox financial thinkers, who cited historical precedents to support their belief "that issuing paper would cause a ruinous inflation" (Lowenstein 2022, p. 91). As in China, U.S. officials sought to bolster the new currency by allowing its use for tax payments. Despite these efforts, paper notes of both combatants suffered steep depreciation against specie (Lowenstein 2022, pp. 288, 306, 310).

Both China and the U.S. managed to finance enormous military outlays. A contemporary account placed the cost of suppressing China's Taiping rebels at 410 million silver taels (Shi and Xu, 2008, p. 67). The annual average of 27.3 million taels during the fifteen-year conflict amounts to two-thirds of the center's previous annual revenue (Table 4). In the U.S., civil war forced Washington "to spend on a never imagined scale"; military

outlays during the first year alone were “six times as much as its previous annual budget” (Lowenstein 2022, pp. 45, 50).

Lowenstein notes that “Over the entire war, the Union supplied fully 21 percent of the federal budget from taxes . . . virtually identical to the 22 percent share achieved . . . during World War I” (2022, p, 287). This metric casts the Qing in the improbable role of fiscal powerhouse: aside from Xianfeng issuance of depreciated and unbacked currency, to which Peng Zeyi assigns a nominal value of 61.29 million taels, or 14.9 percent of estimated anti-Taiping outlays (1983, p. 115), revenue collection was the chief source of finance for the remaining 85 percent (1983, p. 115).

These surprising commonalities between an agrarian empire and a far richer nation – Maddison’s impressionistic measures place U.S. per capita GDP at 200 and 456 percent of China’s in 1820 and 1870 respectively (2001, pp. 243, 267) - highlight the frightening choices that military emergencies impose on pre-modern fiscal and financial systems. Despite its vast natural resources, high income level and nascent industrial power, the United States, like the Qing empire, entered its civil war with no financial reserves, no ready means of expanding fiscal revenue, no market for public debt, no central bank, and a currency system that was neither elastic, uniform nor unified. Confronted with wartime challenges, both states faced a common menu of unpalatable options: ad hoc measures to keep armies in the field, desperate efforts to expand fiscal revenues, and risky introduction of unbacked paper currency into commercial systems accustomed to routine convertibility between credit instruments and full-bodied metallic money.

Qing victory in a far larger conflict – the *annual average* of deaths during the 15-year Taiping uprising exceeded the *entire* human cost of America’s civil war – highlights Qing success in tapping unsuspected sources of cohesion, flexibility, and resilience to preserve their dynasty. In addition to victory in China’s protracted civil conflict, Xianfeng-era war efforts simultaneously spawned innovations that advanced China toward eventual attainment of national, regional, and global wealth and power.

Recent scholarship enabling the Qing-U.S. comparison underlines another point that researchers might ponder. Monetary and fiscal modernization was an ongoing process during the nineteenth century. The issues confronting Qing and the Qing response were not unique to China; the exigencies of war finance, however, stimulated varied responses that reflected particular historical and cultural traditions. Striking parallels between responses by the Qing and the PRC government, noted in this essay, remind us of the continuing influence of these traditions.

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Table 1
Summary of Available Data on Board of Revenue Silver Inventory, 1720-1861
(Million Taels)

	1722-1796	1797-1850	1853-1861
Annual observations	**20**	**11**	**8**
Average	**48.07**	**23.17**	**1.80**
Median	**42.47**	**25.69**	**1.59**
Maximum	**81.82**	**33.48**	**3.03**
Minimum	**23.61**	**9.93**	**1.18**

Source: Shi 2014, pp. 84, 89.

Note: data for 1853-61 include the face value of silver-denominated paper notes;
earlier data are for "actual silver reserves" (p. 102).

Table 2

Silver-denominated Prices during Daoguang and over 14 year Periods before, during and after the Taiping Uprising

	1837-1850		1851-1864		1865-1878		Daoguang 1821-1850	
	Rice Prices	Overall Prices	Rice Prices	Overall Prices	Rice Prices	Overall Prices	Rice Prices	Overall Prices
Number of years	14	14	14	14	14	14	30	30
Years with rising prices	8	7	9	8	5	5	18	16
Number of years when								
prices rose more than 10%	2	2	3	5	2	1	3	4
prices fell more than 10%	2	3	3	4	4	4	3	6
Average of annual price changes (%)	0.74	0.61	8.36	5.05	-2.75	-4.21	0.37	0.40
Median of annual price changes (%)	1.82	-0.16	2.24	1.29	-1.96	-2.75	1.00	0.28
Largest annual price increase (%)	12.05	19.77	79.75	44.26	24.05	11.29	12.05	23.63
Largest annual price decrease (%)	-14.73	-12.68	-39.45	-22.65	-28.28	-19.26	-19.94	-18.86

Source: Calculated from price data in Peng (2006), pp. 173-174.

Note: Silver-denominated Suzhou rice prices include alternate prices for 1861-64, years of Taiping rebel occupation of Suzhou.

Table 3

Annual Percent Change in Suzhou Rice Price Index, 1845-1870
Denominated in Silver and Copper Currencies

Year	Rice Price Index 1760/80 = 100 Denominated in		Annual Percent Change Rice Price Index Denominated in	
	Silver	Copper	Silver	Copper
1845	121.2	245.5		
1846	103.4	228.2	-14.7	-7.0
1847	105.5	228.7	2.1	0.2
1848	107.1	246.3	1.5	7.7
1849	119.0	280.3	11.1	13.8
1850	**129.3**	**288.4**	**8.6**	**2.9**
1851	**118.0**	**264.5**	**-8.8**	**-8.3**
1852	**71.4**	**160.9**	**-39.4**	**-39.1**
1853	**73.1**	**179.8**	**2.3**	**11.8**
1854	**74.7**	**227.0**	**2.2**	**26.2**
1855	**79.0**	**n.a.**	**5.8**	**n.a.**
1856	**80.1**	**324.5**	**1.4**	**n.a.**
1857	**143.9**	**632.3**	**79.7**	**94.9**
1858	**151.0**	**837.6**	**4.9**	**32.5**
1859	**128.2**	**n.a.**	**-15.1**	**n.a.**
1860	**90.9**	**n.a.**	**-29.1**	**n.a.**
1861	***160.2***	***n.a.***	***76.2***	***n.a.***
1862	***229.4***	***n.a.***	***43.2***	***n.a.***
1863	***206.7***	***n.a.***	***-9.9***	***n.a.***
1864	***214.3***	***n.a.***	***3.7***	***n.a.***
1865	153.7	186.9	*-28.3*	*n.a.*
1866	162.3	199.2	5.6	6.6
1867	122.3	166.9	-24.7	-16.2
1868	97.9	127.5	-19.9	-23.6
1869	106.1	167.3	8.3	31.2
1870	112.6	194.8	6.1	16.5

n.a. = Not available

Taiping years (1850-1864) indicated in **boldface**

Years lacking Suzhou rice prices indicated in ***bold italics***

Source: data underlying Figures 1 and 2.

Table 4

Qing Era Central Government Revenues by Source, selected years

Year		Central Government Revenue		Percent Distribution of Revenue by Source						Combined Percent Share	
		Total Revenue	Land Tax	Land Tax	Salt Tax	Internal Customs	Lijin	Maritime Customs	Other	Land & Salt Taxes	Lijin & MC & Other
		mill. taels	mill. Taels	%	%	%	%	%	%	%	
顺治 9	1653	24.38	21.26	87.2	8.7	4.1			0.0	95.9	0.0
康熙 24	1685	34.24	28.21	82.4	11.3	3.6			2.7	93.7	2.7
雍正 2	1723	36.49	30.29	83.0	10.6	3.7			2.7	93.6	2.7
乾隆 18	1753	42.66	29.65	69.5	16.4	10.8			3.3	85.9	3.3
乾隆 31	1766	42.54	29.91	70.3	13.5	12.7			3.5	83.8	3.5
嘉庆 17	1813	40.14	28.02	69.8	14.4	12.0			3.8	84.2	3.8
道光 21	1841	38.59	29.43	76.3	12.8	10.9			0.0	89.1	0.0
道光 25	1845	40.79	30.21	74.1	12.4	13.5			0.0	86.5	0.0
道光 29	1849	42.50	32.81	77.2	11.7	11.1			0.0	88.9	0.0
光绪 11	1885	77.09	32.38	42.0	9.6	3.1	18.5	18.5	9.2	51.6	46.2
光绪 12	1886	81.27	32.83	40.4	8.3	3.2	18.6	17.7	17.7	48.7	54.0
光绪 13	1887	84.22	32.76	38.9	8.3	3.0	19.9	22.9	7.0	47.2	49.8
光绪 14	1888	87.79	33.19	37.8	8.6	3.1	17.7	20.2	12.6	46.4	50.5
光绪 15	1889	80.76	32.06	39.7	9.6	3.2	18.5	20.8	8.2	49.3	47.5
光绪 16	1890	86.81	33.77	38.9	8.6	3.0	17.7	19.3	12.5	47.5	49.5
光绪 17	1891	89.68	33.63	37.5	8.0	2.9	18.2	20.3	13.1	45.5	51.6
光绪 18	1892	84.36	33.32	39.5	8.8	3.0	18.2	20.9	9.6	48.3	48.7
光绪 19	1893	83.11	33.24	40.0	9.2	3.4	17.2	20.2	10.6	49.2	48.0
光绪 20	1894	81.03	32.66	40.3	8.3	3.4	17.5	13.2	17.3	48.6	48.0
宣统 2	1910	269.76	46.13	17.1	17.2	2.6	16.0	13.0	34.1	34.3	63.1

Source: Chen, 2013, Tables 6-1, 6-12, 6-13 and 6-16.

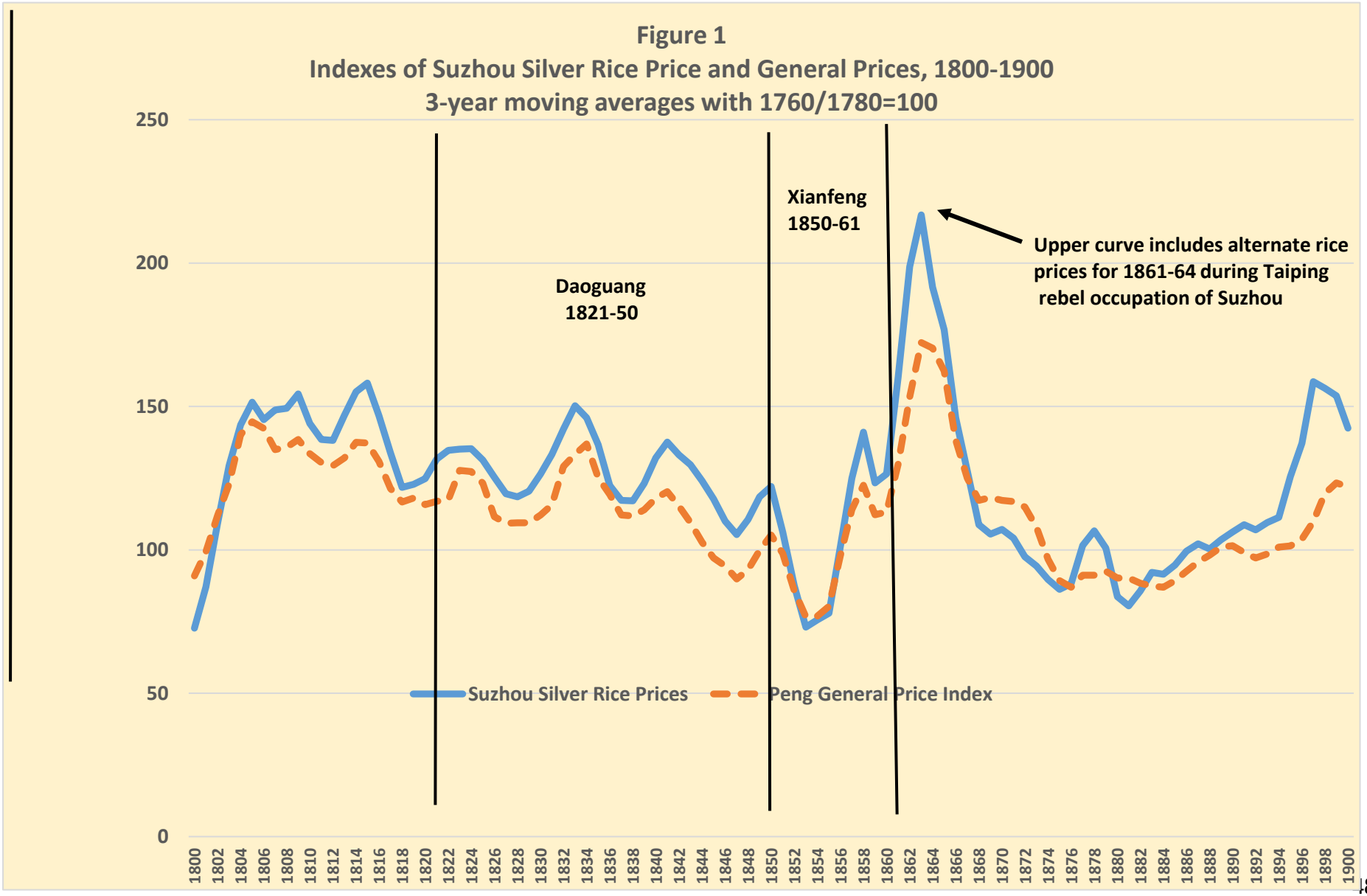
Figure 1
Indexes of Suzhou Silver Rice Price and General Prices, 1800-1900
3-year moving averages with 1760/1780=100
250
200
150
100
50
0
Daoguang
1821-50
Xianfeng
1850-61
Upper curve includes alternate rice prices for 1861-64 during Taiping rebel occupation of Suzhou
Suzhou Silver Rice Prices
Peng General Price Index
1800 1802 1804 1806 1808 1810 1812 1814 1816 1818 1820 1822 1824 1826 1828 1830 1832 1834 1836 1838 1840 1842 1844 1846 1848 1850 1852 1854 1856 1858 1860 1862 1864 1866 1868 1870 1872 1874 1876 1878 1880 1882 1884 1886 1888 1890 1892 1894 1896 1898 1900

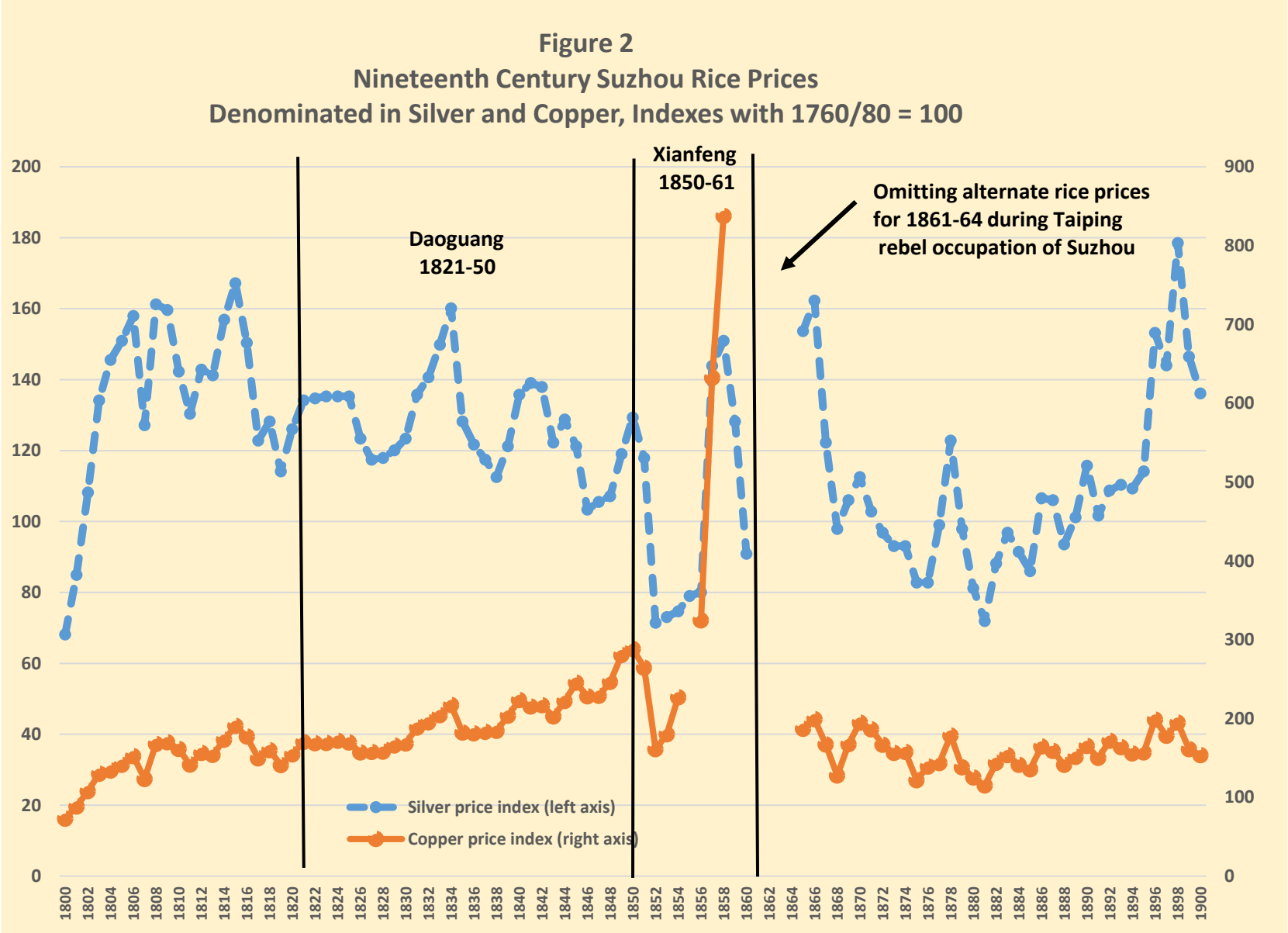
Figure 2
Nineteenth Century Suzhou Rice Prices
Denominated in Silver and Copper, Indexes with 1760/80 = 100
Daoguang
1821-50
Xianfeng
1850-61
Omitting alternate rice prices
for 1861-64 during Taiping
rebel occupation of Suzhou
Silver price index (left axis)
Copper price index (right axis)
0
20
40
60
80
100
120
140
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0
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