

Opium consumption and living standards in Singapore, 1900 to 1939

Keen Meng Choy and Ichiro Sugimoto

Studies on opium consumption in Southeast Asia have thus far not addressed the issue from an economic welfare perspective. This article assembles data from colonial sources to derive estimates of aggregate opium consumption in Singapore during the early decades of the twentieth century. It shows that an alternative measure of welfare that includes opium in the consumption basket led to a declining standard of living amongst unskilled labourers who depended on the drug for their work.

Studies of living standards in the past have been an important strand of economic historical research. In the last two decades, this field has been revitalised by the work of Robert Allen and his co-workers on measuring economic welfare in Europe and Asia during premodern times.¹ The methodology introduced by these authors has spurred a ‘real wage revivalism’ entailing the collection and use of long-term data series on wages and prices to make comparisons of living standards between the major regions of the world.² Amongst the published studies, Southeast Asia has not been left out. Jan Luiten van Zanden and Pim de Zwart examined the disparities in the level of economic development between Java and the Netherlands using both GDP per capita and real wage measures while Keen Meng Choy and Ichiro Sugimoto performed similar exercises for the British colony of Singapore.³ The former authors concluded that Java’s living standard before the Industrial Revolution was only a third of the

Keen Meng Choy is a Visiting Professor in the Faculty of Economics, Soka University, Japan. Ichiro Sugimoto is a Professor in the Faculty of International Liberal Arts, Soka University. Correspondence in connection with this article should be addressed to: keenchoy@gmail.com and ichiro@soka.ac.jp. This work has been financially supported by JSPS (Grant-in-Aid for Scientific Research C: No. 20K01800). We are grateful to two referees whose valuable comments helped in the refinement of the article.

1 Robert C. Allen, ‘The great divergence in European wages and prices from the Middle Ages to the First World War’, *Explorations in Economic History* 38, 4 (2001): 411–47; Robert C. Allen, Jean-Pascal Bassino, Debin Ma, Christine Moll-Murata and Jan Luiten van Zanden, ‘Wages, prices, and living standards in China, 1738–1925 in comparison with Europe, Japan, and India’, *Economic History Review* 64, S1 (2011): 8–38.

2 The term is due to Angus Maddison, ‘Measuring and interpreting world economic performance 1500–2001’, *Review of Income and Wealth* 51, 1 (2005): 1–35.

3 Jan Luiten van Zanden, ‘Rich and poor before the Industrial Revolution: A comparison between Java and the Netherlands at the beginning of the 19th century’, *Explorations in Economic History* 40, 1 (2003): 1–23; Pim de Zwart and Jan Luiten van Zanden, ‘Labor, wages, and living standards in Java, 1680–1914’, *European Review of Economic History* 19, 3 (2015): 215–34; Ichiro Sugimoto, *Economic growth of Singapore in the twentieth century: Historical GDP estimates and empirical investigations* (Singapore:

Netherlands' although the real wages of skilled workers were higher. In contrast, the latter found that Singapore achieved a high standard of living amongst Asian countries in the early twentieth century. Further, the real per capita GDP figures compiled by the Maddison Project indicate that the income level of Singapore was comparable to Japan in the late 1930s.⁴

While these studies on Southeast Asia have added to our understanding of how life was like in the past, they suffer from a potentially serious shortcoming: the subsistence consumption basket on which the comparisons of living standards were based did not include opium, despite its ubiquitous use in Chinese communities as a recreational drug. Starting in the late eighteenth century, European trade and colonial control transformed opium into an item of mass consumption in the region. During the nineteenth century, licensed opium dens operated by the infamous 'revenue farms' became a unique Southeast Asian institution, sustaining mass addiction and generating huge revenues for colonial governments. Hence, excluding opium from consideration is inconsistent with the historical reality, as well as evidence that menial labourers treated the drug as an essential sedative for them to continue their work.

It is the purpose of the present article to revisit the issue of opium consumption in Singapore, with the view to including it in the consumption of labourers so as to reassess the drug's implications for economic welfare. Although the focus here is on Singapore, a major consumer of opium in Southeast Asia, the conclusions reached will also apply, *mutatis mutandis*, to other countries in the region with significant opium-consuming populations. In this regard, it should be pointed out that several studies have examined opium consumption in Southeast Asia but to the best of our knowledge, none have analysed its impact on living standards in an economically rigorous way.⁵

This study fills the gap by reconstructing data on opium consumption and prices using archival sources and the statistical records of the Straits Settlements government.⁶ Needless to say, such an attempt is subject to a number of caveats, including the verisimilitude of official records, incomplete information and in this case, underestimation due to smuggling activities. Nonetheless, reasonably reliable estimates of yearly opium consumption in Singapore for the period 1900 to 1939 can be derived and their long-term trends analysed. With respect to living standards, it is argued here

World Scientific, 2011); Keen Meng Choy and Ichiro Sugimoto, 'Staple trade, real wages, and living standards in Singapore, 1870–1939', *Economic History of Developing Regions* 33, 1 (2018): 18–50.

4 Jutta Bolt and Jan Luiten van Zanden, 'The Maddison Project: Collaborative research on historical national accounts', *Economic History Review* 67, 3 (2014): 627–51.

5 The relevant works include Carl Trocki, 'Opium and the beginnings of Chinese capitalism in Southeast Asia', *Journal of Southeast Asian Studies* 33, 2 (2002): 297–314; Harumi Goto-Shibata, 'Empire on the cheap: The control of opium smoking in the Straits Settlements, 1925–1939', *Modern Asian Studies* 40, 1 (2006): 59–80; Jan C. van Ours, 'The price elasticity of hard drugs: The case of opium in the Dutch East Indies, 1923–1938', *Journal of Political Economy* 103, 2 (1995): 261–79; and James R. Rush, 'Opium in Java: A sinister friend', *Journal of Asian Studies* 44, 3 (1985): 549–60. The studies on Singapore are James Francis Warren, *Rickshaw coolie: A people's history of Singapore, 1880–1940* (Singapore: NUS Press, 2003); Carl Trocki, *Opium and empire: Chinese society in colonial Singapore 1800–1910* (Ithaca, NY: Cornell University Press, 1990); and Cheng U. Wen, 'Opium in the Straits Settlements, 1867–1910', *Journal of Southeast Asian History* 2, 1 (1961): 52–75.

6 The Straits Settlements was established as a Colony of Great Britain in 1867, consisting of Singapore, Penang and Malacca.

that opium figured critically in the daily consumption of the average worker and should be treated as a basic necessity. By so doing, the implications for living standards can be drawn out.

A short history of opium in Singapore

It is probable that opium first landed on Singapore's shores not long after Thomas Stamford Raffles founded the British outpost in 1819 and turned it into a free trading port. From the annual trade returns, Wong Lin Ken reckoned the trade in opium as amounting to 1,285 chests in 1836, rising to 4,689 chests in 1856.⁷ Partially realising Raffles' vision, Singapore quickly developed into the opium market of the Malay Archipelago. The drug, together with cotton goods, became a major item of export from Singapore to Mainland and Island Southeast Asia during the early colonial period.⁸ As Chiang Hai Ding noted, after Singapore became a Crown Colony in 1867, the opium shipped out in 1875 was 7,041 chests.⁹ The quantity exported increased steadily until 1910, when opium shipments were valued at S\$9,297 and imports amounted to S\$16,522.¹⁰ The trade imbalance was due to a substantial amount of imported opium being consumed in the domestic market.

At the end of 1847, there were an estimated 15,043 habitual opium smokers in Singapore who were mostly migrant workers from China, implying that over half of the Chinese population in the city consumed the drug.¹¹ They were not an isolated urban phenomenon, for Carl Trocki has noted that opium also found its way to the Chinese mining and planting settlements throughout Southeast Asia, where opium may well be considered a necessity.¹² The number of opium users had risen in all likelihood by the time the official report of the Straits Settlements Opium Commission was published in 1908, although the Commission studiously refrained from stating the proportion of the total Chinese population who were smokers.¹³ The report also asserted that the habit was mostly acquired in Singapore because opium was beyond immigrants' means in China and family sanctions served as a further deterrent.¹⁴

The increase in opium consumption in the late nineteenth century can only be understood in the context of the massive Chinese emigration that took place, and

7 Wong Lin Ken, 'The trade of Singapore, 1819–1869', *Journal of the Malayan Branch of the Royal Asiatic Society* 33, 4 (1960): 116. A standard chest of opium weighed about 140 lb or 63.5 kg. 1,000 chests are equivalent to about 70 tons.

8 Atsushi Kobayashi, 'The role of Singapore in the growth of intra-Southeast Asian trade, c.1820s–1852', *Southeast Asian Studies* 2, 3 (2013): 463.

9 Chiang Hai Ding, *A history of Straits Settlements foreign trade, 1870–1915* (Singapore: National Museum of Singapore, 1978), p. 200.

10 S\$ denotes the Straits Settlements dollar, which was pegged at 2s. 4d. in 1906.

11 R.E.S. Little, 'On the habitual use of opium in Singapore', *Journal of the Indian Archipelago and Eastern Asia* (1848): 65–6.

12 Carl Trocki, 'A drug on the market: Opium and the Chinese in Southeast Asia, 1750–1880', paper presented to the 5th Conference of the International Society for the Study of the Chinese Overseas, Elsinore, Denmark, 10–14 May 2004; Trocki, *Opium and empire*, p. 67.

13 Straits Settlements Opium Commission, *Proceedings of the Commission appointed to enquire into Matters relating to the use of Opium in the Straits Settlements and the Federated Malay States*, vol. I (Singapore: HMSO, 1908), p. 18.

14 *Ibid.*, p. 11.

Singapore's position as the centre of the trade in both opium and people in the region. As the centre of the opium trade, Singapore was where the traders servicing the Chinese settlements—which had grown tremendously with the boom in the tin mining industry in British Malaya and Dutch East India—came for their supplies. As the centre of the 'coolie traffic', labourers from China usually landed in Singapore before being shipped out to the surrounding areas. Given that the city was growing rapidly as the main export outlet for the region's tin, some of these *sinkeh* (literally, new guests) stayed on and found work as port coolies, stevedores, coal-heavers, construction workers or rickshaw pullers. Many of them indulged in opium smoking, colloquially referred to as 'chasing the dragon', for much the same reasons as their mining and plantation brethren, as two documenters of Singapore's history have noted:

Opium assuaged the daily aches and pains that came with their job, and it was famous for giving a superb night's sleep ... Not only rickshaw coolies succumbed to the drug, but also plantation workers and tin miners, in short, any labourer whose job entailed grueling physical exertion.¹⁵

Since opium is an analgesic with soporific properties, it was also used as a pain-killer, a cure for dysentery and an anti-malaria drug. Thus, the supply of opium from India met the huge demand for it in Singapore, British Malaya and the Dutch East Indies.

Not surprisingly then, the prevalence of opium smoking among the occupations in Singapore varied according to the strenuousness of the labour required. Coal coolies, for example, were thought to contain 60 per cent of smokers in their ranks while the same proportion was found among railway construction workers, although only 20 per cent were habitual smokers.¹⁶ At the other end of the spectrum, only 5 to 10 per cent of gardeners smoked opium. But the drug's penetration into the most gruelling of vocations seems undisputed—the jinrikisha pullers of urban Singapore. In his historical ethnography, James Francis Warren conjectured that 80 per cent of rickshaw coolies were smokers, including those who used opium only at intervals.¹⁷ Based on a conservative tally of 20,000 pullers in the period 1900 to 1930, this would have put the number of opium smokers among them at 16,000.¹⁸ Many smokers who appeared before the 1908 Commission to provide testimony claimed that opium was bad, but they could not work without it and tended to increase their intake over time. Rickshaw coolies in particular were adamant that they could not stand the arduous strain of their calling without it.¹⁹

In Singapore, the distribution of the drug to the consuming masses was effected by one of the most enduring institutions of colonial Chinese society, the opium 'revenue farms'. These had originated from the Chinese settlements of the eighteenth

15 Mark Ravinder Frost and Yu-Mei Balasingamchow, *Singapore: A biography* (Singapore: Editions Didier Millet; National Museum of Singapore, 2009), pp. 156–7.

16 Straits Settlements Opium Commission, *Proceedings of the Commission*, vol. I, p. 12; British Malaya Opium Committee, *Proceedings of the Committee appointed by His Excellency the Governor and High Commissioner to Inquire into Matters Relating to the Use of Opium in British Malaya* (Singapore: 1924), B-30.

17 Warren, *Rickshaw coolie*, p. 242.

18 The estimate of the number of rickshaw pullers is from *ibid.*, p. 38.

19 *Ibid.*, pp. 241–9.

century and dated from the earliest days of Singapore's existence, when its first Resident William Farquhar dished out licences to sell opium to local merchants in return for periodic payments. Simply put, the opium farm consisted of monopoly rights to process raw opium into a smoking paste known colloquially as *chandu* and sell it to retail customers. These exclusive rights were auctioned off by the colonial government for a fixed number of years to successful bidders, who then operated the farms while paying a monthly 'rent' to the government.

When this method of taxation, which was first used by the colonial authorities in the Dutch East Indies, was introduced in Singapore, it made a lot of sense: first, the free port status of the Straits Settlements made import and export duties nigh impossible. Second, it enabled the government to collect what in effect was a consumption tax from an essentially transient population without spending scarce resources on bureaucracy, infrastructure and the policing of smuggling activities.²⁰ The farmer on his part could take advantage of the inelasticity of opium demand, charge as high a price as the market could bear—subject to government regulation at various times—and earn supernormal economic profits.²¹ Although competition between rival bidders could in theory keep a cap on such profits, they would sometimes collude to offer a low bidding price and once the farm rights were secured, combine their interests in a joint syndicate.

The opium farmers in Singapore were typically wealthy and politically connected Chinese businessmen.²² This local elite could marshal the financial capital needed to invest in retail shops, equipment, raw opium and importantly, bands of revenue peons called *chinteng* whose main job was to prevent the smuggling of contraband opium into the farmer's territory.²³ The opium business was mostly carried out in shop-houses located in and around Chinatown, although these opium dens were also found in the vicinity of Victoria Street and the Bugis area, catering especially to the rickshaw coolies. The brothels in Chinatown also peddled the drug routinely, and it was as habitués of such places that the single young men who immigrated to Singapore from China with nowhere to spend their free time picked up the addiction to the drug from friends who persuaded them that opium was an aphrodisiac.²⁴

The demise of the opium revenue farms in the early twentieth century was pre-empted by the publication of the report of the 1894 Royal Opium Commission set up by the British House of Commons to study the opium problem in India. As a result of the report, the Straits Settlements government was directed to further control the farms by placing a maximum selling price on opium and excluding Malays from its use. These reforms have been interpreted as pre-emptive attempts by the

20 The first Governor of the Straits Settlements, Sir Robert Fullerton, had remarked that 'the vicious propensities of mankind are the fittest subjects of taxation', *Straits Settlements Records*, H13 (1824).

21 Relevant statistics are not available for Singapore, but it is revealing that the opium revenue farmers in Penang reaped an average profit of 70% in 1825. Nordin Hussin, *Trade and society in the Straits of Melaka: Dutch Melaka and English Penang, 1780–1830* (Singapore: NUS Press, 2007), p. 258.

22 For a detailed account of the operation of revenue farms in Singapore, see Trocki, *Opium and empire*.

23 Trocki, 'Opium and the beginnings', pp. 297–314. According to Trocki, a force of about 80 men were employed in this function in the 1880s.

24 Warren, *Rickshaw coolie*, p. 242. Other reasons for commencing the habit were 'as a remedy for sickness', 'as an antidote to sorrow', 'for fun' and 'from bad example'. Straits Settlements Opium Commission, *Proceedings of the Commission*, vol. I, p. 11.

government to protect the revenue farms, rather than abolish them, against the rise of the anti-opium movement in England.²⁵ The fact of the matter is that the government depended heavily and absolutely on the farms for the resources needed to administer the colony. Revenue maximisation had always been the abiding principle of British opium policy in the Straits Settlements since the drug accounted for close to half of government revenues in the first two decades of the twentieth century.²⁶

These tactics seem to have worked for a while as anti-opium sentiment built up in Singapore at the turn of the twentieth century, and it was only in 1907 that the Straits Settlements Opium Commission was appointed to inquire into matters relating to the use of opium. As in 1894, the attitude of the colonial government to the setting up of the Commission was ambivalent but in the event, it recommended to abolish the opium farm, ban the sale of opium to those under 18, and suppress its use in brothels. A government Monopoly Department was created in 1910 to take over the manufacture and sale of opium, although private retail shops continued to coexist with government-run outlets until 1926. In 1923, there were 423 of the latter, with an estimated average of 377 Chinese customers per shop.²⁷

Meanwhile, amid increasing pressure on the British government by the international community to change its opium policy in overseas colonies, the local anti-opium movement gathered strength and agitated for banning the drug.²⁸ By the 1920s, the tide of public opinion had turned decisively, with opium smoking being regarded as a social and moral evil even though the colonial authorities continued to aver that smoking opium in moderation was not harmful and the 'evil effects' arising from it came from excessive consumption. As a consequence, another official committee was set up in 1924 to look into the issue, resulting in the compulsory licensing of smokers as well as the rationing of opium supplies. But it was not until 1943, during the Japanese Occupation, that a complete ban on opium came into place, although partial suppression had been instituted in 1934 when the registers of smokers were closed to new applicants (excluding those who had a medical practitioner's certificate) and the amount of *chandu* sold to registered smokers was limited to 7.5 grammes a day.²⁹ Thus, it took more than a century for the bane of opium to be banished from Singapore.

Estimates of opium consumption

There is no official data on the consumption of opium in Singapore. For the purpose of estimating the expenditure on opium from 1900 to 1939, two approaches can be taken. The first is to use data on government revenue from the sale of opium as an obvious proxy, but figures on gross receipts were only compiled starting from 1913, as prior to that and up to 1909, the Chinese revenue farms were exclusively responsible for distributing the drug to consumers. The second approach and the one adopted by

25 Cheng, 'Opium in the Straits Settlements', p. 54; Warren, *Rickshaw coolie*, p. 248.

26 The estimate of government revenues is from *ibid.*, p. 52, and British Malaya Opium Committee, *Proceedings of the Committee*, B-19.

27 British Malaya Opium Committee, *Proceedings of the Committee*, A-25.

28 Detailed accounts of the anti-opium movements internationally and domestically are given by Cheng, 'Opium in the Straits Settlements', and Goto-Shibata, 'Empire on the cheap'.

29 Goto-Shibata, 'Empire on the cheap', pp. 75-9.

this article is to utilise data on the quantity of opium purchased and the price at which it was sold to final users, which is available for the bulk of the period from 1900 to 1922. Except for lacunae in 1908 and 1923–25, this statistical information can be found in the two reports inquiring into opium use, and it is a straightforward matter to calculate the value of opium consumption from them.³⁰ The missing observation for the year 1908 was dealt with by assuming that the per capita opium consumption of the Chinese population in Singapore was unchanged from the previous year, after allowing that population to increase in line with the average over 1900 to 1907.

The interregnum between the convening of the second Opium Committee in 1924 and the complete phasing out of private retailers in 1926 presented a greater difficulty, which necessitated the adoption of a more elaborate estimating procedure for the period 1923–25. As a first step, figures on the gross government revenue received from opium sales were obtained from the *Annual Report, Government Monopoly Department, Straits Settlements*. However, these statistics did not fully capture actual consumption as the profit margins of licensed sellers were not accounted for. The consumption of opium in these years was therefore estimated by summing up government receipts from the sale of opium to consumers at retail prices, and government receipts from the sale of *chandu* to private shops at wholesale prices, which were adjusted to their retail values by adding a trade and transport mark-up of 4.2 per cent.³¹

With respect to the final phase of opium consumption from 1926 to 1939, the Monopoly Department made direct sales through its outlets, with no private dealers involved. Therefore, gross government receipts can be taken to represent the final consumption expenditure on opium. Unfortunately, these figures were only reported sporadically in 1926–27 and 1932–34, with the consequence that the data for the other years had to be worked out by applying a conversion factor to a series on net revenue extracted from the *Blue Book, Straits Settlements*.³² A further complication arose because the breakdown of net revenue into the separate entities of the Straits Settlements is only available beginning from 1929, and so the share of Singapore during the years from 1926 to 1928 had to be inferred from the average figure for the following few years (50 per cent).³³

The line with square markers in [fig. 1](#) shows the estimated value of opium consumption in Singapore from 1900 to 1939. Expenditure on the drug rose steadily in

30 Data on the amount of prepared opium sold and its per unit price for 1900–07 is found in Straits Settlements Opium Commission, *Proceedings of the Commission*, vol. I, p. 9 and vol. III, p. 80. Thereafter until 1922, similar information was recorded in British Malaya Opium Committee, *Proceedings of the Committee*, B-7 and B-15, except for the quantities sold in 1909 and 1910, which were taken from *Annual Report, Government Monopoly Department, Straits Settlements* (Singapore: Government Printing Office, 1910), p. 101.

31 The mark-up is based on the estimate for 1922.

32 The conversion factor used is the ratio of gross to net revenues for adjacent years, i.e., the factor for 1928–29 is based on 1927, that for 1930–31 is from 1932, and the factor for 1935–39 is the one for 1934.

33 The vexing problem of splitting Singapore from the other settlements in the colonial statistics is one that has constantly bedevilled economic historians. See for example, Lim Chong Yah, *Economic development of modern Malaya* (Kuala Lumpur: Oxford University Press, 1967), and Sugimoto, *Economic growth of Singapore*.

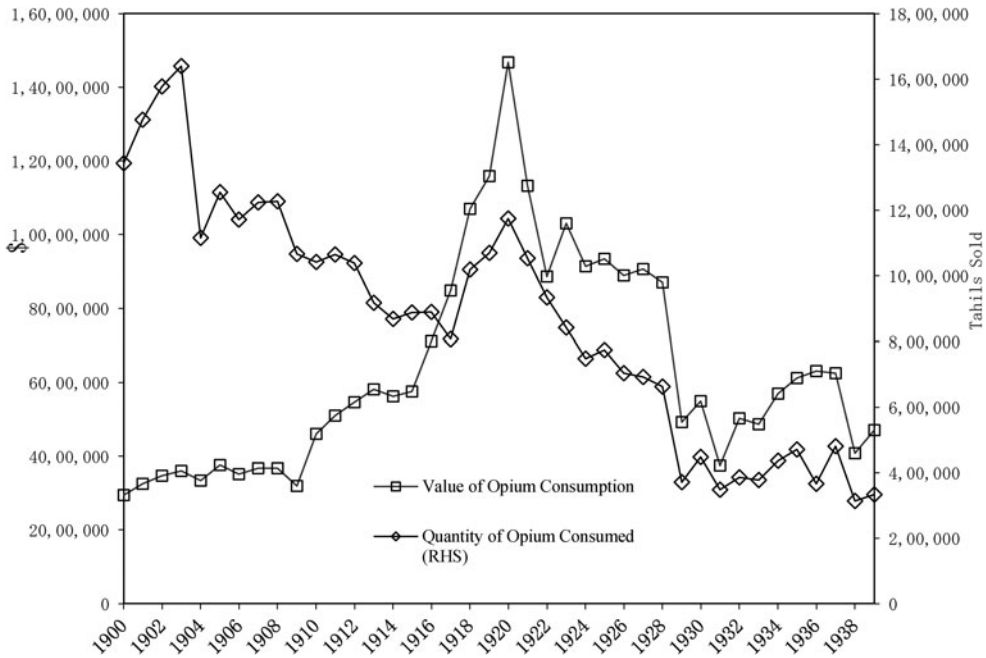


Figure 1. Opium consumption in Singapore, 1900–39

the 1910s and then fell sharply in the following decade before stabilising. At the peak in 1920, the value of opium consumption was \$14.67 million, equivalent to 10.7 per cent of private consumption spending in Singapore.³⁴ In general, the share of opium in private consumption varied between 7 per cent and 11 per cent during the first two decades of the twentieth century, but it fell to an average of 6.2 per cent in the 1920s and 3.5 per cent in the 1930s. To put these numbers into perspective, it should be noted that the share of food averaged 61.1 per cent over the entire period 1900–39, while that of clothing was 10 per cent.

On the face of it, the amount of money spent on opium would suggest that consumption of the drug increased rapidly during the 1910s, after which tightened government controls in the 1920s curtailed its usage. But a rather different picture is portrayed by the data on quantities of opium consumed, at least up to 1920 (fig. 1, line with diamond markers). There is a clear long-term downward trend in the quantity of opium ingested over the period studied. After rising in the early years of the twentieth century, the quantity dropped abruptly in 1904 to 1.1 million tahils.³⁵ Although the reason for this is not evident, the revenue farmers began to furnish monthly returns of opium sales to the colonial administration beginning from 1905 whereas before that, they had supplied only annual returns, which could have resulted in over-estimation. A more plausible explanation—the one given by the Opium Commission of 1908—was the rise in the market price of opium in 1904, from

34 Figures for private consumption are taken from Sugimoto, *Economic growth of Singapore*.

35 Tahlil is a local measure of weight, equivalent to about 1.33 lb or 37.6 grammes.

S\$2.20 per tahlil to S\$3, a more than one-third increase.³⁶ Dearer opium resulted in a fall in the amount sold in 1904, but expenditure on the drug hardly changed and in fact rose in the following year, indicating that the demand for opium was inelastic.³⁷

To the Commission's credit, it did not recommend an increase in the opium price after the government monopoly was established even though that could have brought in more revenue, for essentially the same reasons it eschewed legislative prohibition, namely, it would encourage smuggling and worsen the already serious problem of smokers switching to morphia or opium dross.³⁸ Nevertheless, the retail price of opium went up to S\$4.80 per tahlil in 1911 and S\$12.50 in 1920, and this explains the rising expenditure on the drug even as the quantity consumed fell. While this provides further evidence for the inelasticity of opium demand, the progressive price increases in all likelihood had a dampening effect on consumption, considering that the Chinese population in Singapore increased by 95,574 persons between 1911 and 1921.³⁹ In 1924, the Opium Committee called a halt to price increases at S\$12 per tahlil and there it stayed more or less until 1939.

Apart from price, another factor that appears to have affected the quantity demanded of opium was general economic conditions in the Colony, which depended to a large extent on the tin mining and rubber planting industries in Malaya. When tin and rubber production boomed, wages were high and workers spent their extra money on the drug.⁴⁰ The Opium Commissions also observed that the quantity of opium consumed by the lower classes was limited by their incomes.⁴¹ It therefore seems reasonable to postulate that the fall-off in the early 1920s seen in fig. 1 was due to the world recession that hit Singapore hard. Similarly, the onset of the Great Depression is likely to have been the principal cause of the drastic decrease in consumption in 1929.

After peaking in 1920, the changes in opium consumption in nominal and real terms basically mirrored each other. Both exhibited steep declines in the 1920s and by 1934 when the partial ban was instituted, the quantity of opium consumed had fallen to 437,000 tahils, less than a third of that in 1920. Clearly, the new control measures introduced from 1925 onwards were effective in suppressing the use of opium.

36 Straits Settlements Opium Commission, *Proceedings of the Commission*, vol. I, p. 34. Since the Singapore market was too small to impact the larger regional trade in opium, the local price of the drug was effectively determined by global demand and supply, as argued by Trocki, *Opium and empire*. Notwithstanding this, the colonial government had influence over the retail price through its monopoly of the manufacture and distribution of opium after 1910.

37 Research has found that addictive drugs tend to have a low price elasticity of demand. For example, Jan van Ours reported that the price elasticity of opium was in a range from -0.7 to -1 , based on information collected by the Dutch East Indian government during the Opium Regie period. Jan C. van Ours, 'The price elasticity of hard drugs'. The Opium Committee of 1924 implicitly recognised that the demand for opium was inelastic when it stated that 'the reduction in consumption has not been proportionate to the increase of price', British Malaya Opium Committee, *Proceedings of the Committee*, A-31.

38 Straits Settlements Opium Commission, *Proceedings of the Commission*, vol. I, pp. 34–5. Opium dross is the residuum remaining in the opium pipe after smoking.

39 Saw Swee Hock, *The population of Singapore*, 3rd ed. (Singapore: Institute of Southeast Asian Studies, 2012), p. 29.

40 Goto-Shibata, 'Empire on the cheap', p. 68; Choy and Sugimoto, 'Staple trade, real wages, and living standards', pp. 34, 36.

41 Straits Settlements Opium Commission, *Proceedings of the Commission*, vol. I, pp. 34–5; British Malaya Opium Committee, *Proceedings of the Committee*, A-14.

Greater public awareness of the problem and the social opprobrium attached to the habit also played an important role. In 1936, the Governor of the Straits Settlements reported that, as of September 1935, opium addicts in Singapore did not number more than 35,000, or approximately 5 per cent of the Chinese population.⁴²

Implications for living standards

The real wage methodology referred to at the beginning of this article uses a subsistence consumption basket to compare the purchasing power of real wages across countries or regions, and therefore has some advantages over GDP per capita as a gauge of economic well-being. But it also has some shortcomings. Anne Booth, for example, has argued that these interspatial and intertemporal comparisons cannot be meaningfully effected given different levels of economic development. Moreover, they do not take account of the functioning of labour markets, in particular the phenomena of wage rigidity and segmentation.⁴³

The historical real wage computed in the methodology referred to is interpreted as an absolute indicator of welfare, given that the subsistence basket corresponds to something like the 'poverty line' in modern times, in that it tells us whether a worker is able to afford the minimum necessities of life.⁴⁴ As such, opium has been excluded from the subsistence basket in the studies on Southeast Asia. Unlike tobacco and alcohol, however, opium was not a luxury commodity but a basic necessity for a large proportion of the labouring class in Singapore, although the upper classes treated it as a leisure good. As mentioned earlier, opium fulfilled a psychological need of menial workers and was essential for them to perform their jobs and earn the income required to purchase the subsistence basket. The argument that consumption of the drug added neither to calorific nor protein intake—the biological basis for the calibration of the subsistence basket—is beside the point. The fact remains that opium smokers devoted a portion, possibly substantial, of their earnings to the drug and hence, it should be included in their consumption basket to give a more accurate representation of living conditions.

Figure 2 is an analytical depiction of the modified poverty line for an opium smoker in Singapore. The minimum daily calorie intake is taken to be 1,940, which determines the basic level of food expenditure. The Engel curve relates food expenditure to income and has a concave shape because consumers switch to increasingly expensive sources of nutrition as income rises. For an opium smoker, the amount of income required to obtain the necessary calories and opium as well as the non-food items that are typical of that level of income is shown by the poverty line. This minimal consumption level is given by the intersection of the total expenditure curve and the

42 Goto-Shibata, 'Empire on the cheap', p. 77.

43 Anne Booth, 'What do trends in wages tell us about living standards? Some evidence from Southeast Asia', paper prepared for the XIV International Economic History Congress, Helsinki, 21–25 Aug. 2006, pp. 4–10.

44 The correspondence between the historical and modern measures is established in Robert C. Allen, 'Poverty lines in history, theory, and current international practice', Discussion Paper Series no. 685, Department of Economics, University of Oxford (2013).

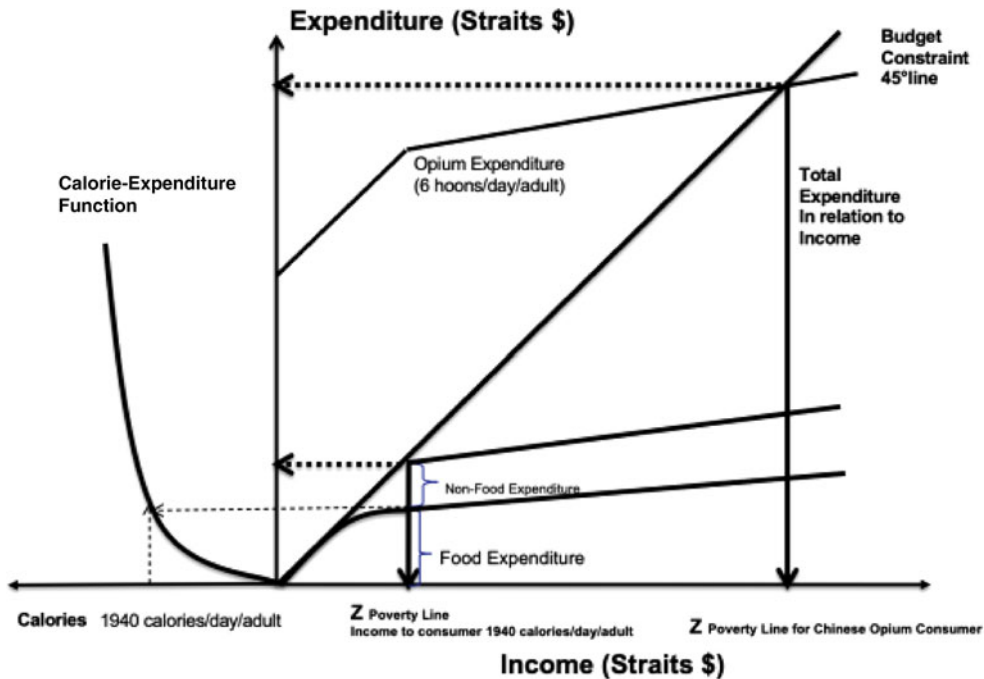


Figure 2. Poverty line for opium smokers

budget constraint. The figure shows that the poverty line of the smoker will be located at a higher income compared to a non-smoker due to the additional spending on opium.

Determining the poverty line in practice for opium users would require an estimate of the amount an individual smoker spent on opium. For a start, dividing the total amount of opium consumed in each year by the Chinese male population over 15 years of age would clearly lead to an understatement of average consumption per head. Credible estimates of the proportion of smokers in the population are also hard to come by, the only statistics available being the widely divergent guesses of witnesses summoned by the Opium Commissions. In the absence of direct surveys before the registration of smokers was instituted, hospital, prison and asylum records provide the next best sources of information on the incidence of opium addiction in Singapore.

It was reported that out of the 12,560 hospital admissions in Singapore from March 1907 to February 1908, some 1,626 were opium smokers, a proportion of 13 per cent.⁴⁵ This finding is likely to be biased downward for the Chinese population because the admissions data did not distinguish between the races. In a small census carried out later in 1923, the incidence of opium smoking amongst Chinese patients in Tan Tock Seng Hospital was decidedly higher, at 36 per cent.⁴⁶ In the same year,

45 Straits Settlements Opium Commission, *Proceedings of the Commission*, p. 101.

46 British Malaya Opium Committee, *Proceedings of the Committee*, B-22.

the ratio of opium addicts amongst Chinese prisoners in Singapore was 26 per cent, while a set of returns for the years 1902 to 1923 furnished by the Superintendent of Taiping Prison, the largest in Malaya, showed that the corresponding ratio was 30 per cent.⁴⁷ If one conservatively posits on the basis of these partial enumerations that a third of the Chinese adult male population in Singapore was given to the opium habit, the number of smokers would work out at 42,065 in 1911, rising to 56,559 in 1921.⁴⁸ The implied amount consumed by each smoker would be 2.6 grammes per day in the earlier year and 1.9 grammes in the later year.

The veracity of these estimates of opium consumption per head has to be assessed in terms of the dichotomous characterisation of smokers as 'moderate' or 'excessive' by the colonial government in Singapore—if indeed such a distinction can be meaningfully made (another equally problematic categorisation is that of 'occasional' versus 'regular' or 'habitual' smokers). In this respect, the 1908 Opium Commission pointed out that the limit of 7.5 grammes a day laid down by the China Mutual Life Insurance Company as the maximum consumption of persons who were acceptable as first-class risks constituted an amount that 'is by no means within the range of light smoking'.⁴⁹ As far as the colonial government was concerned, the reality of the situation in Singapore was that the majority of opium users were moderate smokers.⁵⁰ It bears pointing out that the assertion was not as disingenuous as it might seem. For example, James Rush has documented that the vast majority of Java's opium consumers under the Opium Regie were modest smokers and large numbers of them used very small amounts of opium.⁵¹ Similarly, Xavier Paulès found that the major proportion of opium smokers in the city of Canton in China during the 1930s had a rather small daily consumption of less than 3.8 grammes a day.⁵²

More direct evidence of the amount consumed per day by a moderate smoker in Singapore is also found in the aforementioned hospital records. The census of 1923 indicated that of the total number of opium smoking patients admitted into hospitals in British Malaya, a cumulative proportion of 88 per cent had a daily consumption of not more than six hoons (2.3 grammes) while 41 per cent consumed an amount of not more than three hoons (1.1 gramme).⁵³ Inquiries made of Chinese inmates at leper asylums corroborated this statistical evidence, and in fact suggested that an even larger percentage of smokers of 47 per cent consumed not more than three hoons a day.⁵⁴ Interestingly, the amount of six hoons a day would be consistent with the consumption per head estimates derived earlier (of between 1.9 and 2.6 grammes) if the distribution of opium users was such that there was a small number of heavy

47 Ibid., A-11 and Appendix XXIII, B-26. The prison in Kuala Lumpur, another Chinese-dominated city in British Malaya, returned a proportion of 25 per cent.

48 The number of smokers is arrived at by using the statistics on the consumption per adult male per annum provided in *ibid.*, A-17.

49 Ibid., pp. 13, 15. The limit was also the amount rationed out to registered smokers in 1934.

50 Ibid., pp. 15–16.

51 Rush, 'Opium in Java', p. 552.

52 Xavier Paulès, 'In search of smokers: A study of Canton opium smokers in the 1930s', *East Asian History* 29 (2005): 111.

53 British Malaya Opium Committee, *Proceedings of the Committee: A-14*. One hoon is equal to 0.38 gramme.

54 Ibid.

smokers, a large number of moderate smokers and a minority of light smokers. Furthermore, amongst the ranks of rickshaw pullers, six hoons a day was the most common amount mentioned and for coolies in railway construction, three to four hoons was the standard.⁵⁵

To draw out the implications of opium for the colony's general living standards, the consumption norm will be taken to be six hoons per day. The impact on an individual smoker's welfare would then depend on whether he consumed in excess or below the norm. Table 1 shows the subsistence consumption basket constructed by Keen Meng Choy and Ichiro Sugimoto after adding opium.⁵⁶ The staple food in the basket was rice, supplemented by fish, vegetables and fats. The non-food items were mainly apparel, fuel (for lighting and cooking) and housing. The annual cost of the subsistence basket came up to S\$169.44 in 1914 at the prices prevailing then, with the expenditure on opium being S\$142.35. These calculations suggest that even for a moderate smoker consuming six hoons a day, the cost of satisfying his craving dwarfed other spending.

Would a worker in Singapore have been able to afford the subsistence bundle if he smoked opium? The answer depends first and foremost on his wage earnings in a year, which in turn hinges on whether he was a skilled or unskilled labourer and the number of days he worked. Given the existence of a skill premium, the former earned much more.⁵⁷ The length of the work week is not known for sure, but anecdotal evidence culled from rickshaw pullers suggests that most coolies took only a few days off every month, apart from festival periods such as the Lunar New Year.⁵⁸ Going on this information, the total number of working days per annum would be about 300. Equally important to the question of affordability was an opium smoker's marital status, as that would determine if he needed to support a family. It seems safe to proceed on the assumption that almost all opium users in Singapore were bachelors, certainly before the 1920s. Even if they were married, they had left their families in China to sojourn to the Nanyang (literally, 'South Seas').

Using information collected on the price changes of items in the subsistence consumption basket in conjunction with nominal wage data, it is possible to compute income/expenditure ratios by dividing total earnings in a year with the annual cost of the basket of goods inclusive of opium.⁵⁹ If this ratio equals or exceeds one, the worker was able to afford the consumption bundle with his wage earnings. On the other hand, if the ratio falls below one, he would encounter difficulties in maintaining even a subsistence standard of living.

Figure 3 shows the results. For skilled labourers such as artisans and craftsmen, the ratio was almost always larger than one throughout the period studied. In the case of unskilled workers, including port coolies, rickshaw pullers and other menial workers for whom wage data was only compiled from 1912, those amongst them who smoked six hoons of opium or more a day would struggle to survive, especially

55 Ibid., A-15.

56 Choy and Sugimoto, 'Staple trade, real wages, and living standards', pp. 29–30.

57 Ibid., p. 39. The skill premium rose in the interwar decades and reached 200% by 1938.

58 Warren, *Rickshaw coolie*, pp. 186–7.

59 Readers familiar with the historical real wage studies will recognise that these are 'welfare ratios', as defined in that literature.

Table 1 Subsistence consumption basket in Singapore with opium, 1914

Commodity	Quantity per person per year	Expenditure in 1914	Budget share (%)	Nutrients/day	
				Calories	Protein (grammes)
Rice	172 kg	\$18.81	11.1	1,677	47
Fish	3 kg	\$0.57	0.3	8	2
Beans	13 kg	\$1.06	0.6	122	9
Oil	5 kg	\$1.49	0.8	112	0
Sugar	2 kg	\$0.33	0.2	21	0
Soap	1.3 kg	\$0.25	0.2		
Cotton	3 m	\$1.16	0.7		
Kerosene	2.6 litre	\$0.71	0.4		
Fuel	2 MBTU	\$0.81	0.5		
Rent		\$1.90	1.1		
Opium	0.8 kg	\$142.35	84.0		
Total		\$169.44	100.00	1,940	58

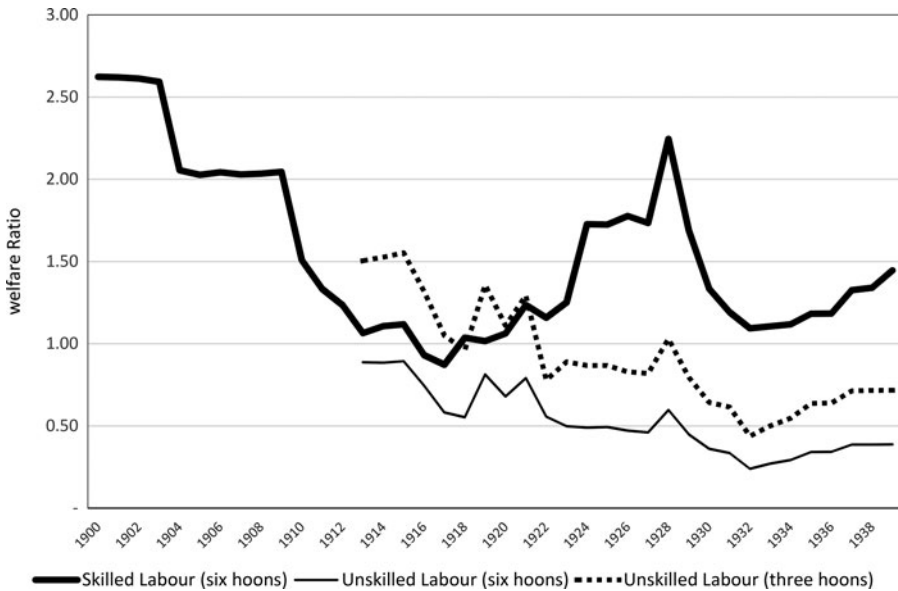


Figure 3. Income/expenditure ratios, 1900–39

when the retail price increased. By the 1920s, their earnings could only cover half of their expenses and they fell further into destitution when the Great Depression struck in the early 1930s. By then, addicts were spending over 90 per cent of their earnings on opium. Surprising as it is, such a conclusion is consonant with the predicament of

rickshaw pullers, for whom opium became the major source of 'nourishment'.⁶⁰ Figure 3 also plots the income/expenditure ratio for unskilled workers who smoked three hoons a day: it is seen that these lighter smokers could also not escape the poverty trap starting from the early 1920s.

Dismal as these conclusions may seem, there are several mitigating factors to consider. First, the wages of unskilled workers used in the analysis are the minimum received by rubber tappers in Singapore and averaged only 50¢ a day until the recession of the thirties brought it down to 25¢. Nonetheless, other labourers such as those working in factories earned somewhat more, with an average per diem wage of 70¢.⁶¹ The rickshaw coolies also fared better, with net wages of \$S1 per day or more in the 1920s.⁶² Second, working more hours each day offered some scope to enhance incomes—an 'industrious revolution' in pursuit of opium.⁶³ Once their earning capacity had been exhausted, however, opium addicts had to resort to borrowing or reduce their purchases of other goods. Given that the food requirements in the subsistence basket were already minimal, this would mean starvation.⁶⁴ The Opium Commission of 1908 acknowledged this, but maintained that the 'physical evils' of starvation are confined to a minority of excessive smokers.⁶⁵ Third and more likely than not, smokers reacted to higher prices by curtailing their consumption or by switching to the cheaper and more deleterious substitutes of swallowing opium dross or injecting morphine favoured by excessive smokers.⁶⁶

Conclusion

Summing up, the investigation of living standards in this article highlights the difference in the relatively modest macroeconomic import of opium and its outsize impact on individual economic welfare. The divergence in fortunes between the Singapore population at large and those at the bottom rungs of the social ladder was no less stark: while the former experienced material improvements through the 1920s and 1930s, the latter were faced with a declining standard of living.⁶⁷ Although opium was arguably a necessity to the workers engaged in hard physical labour, it also condemned them to a life below the poverty line. Moreover, this study has not factored in the social and health effects of opium smoking. These costs are likely to have been most pernicious among the heaviest users and the impoverished, trapping them in a vicious cycle of hard labour, addiction and ultimately, death.

The article has shown that our existing understanding of the living standards of labourers in Singapore, and by extension other parts of Southeast Asia, needs to be

60 Warren, *Rickshaw coolie*, p. 246.

61 Choy and Sugimoto, 'Staple trade, real wages, and living standards', p. 38.

62 Warren, *Rickshaw coolie*, p. 246.

63 Allen, 'The great divergence', p. 430.

64 Paulès, 'In search of smokers', p. 125, noted that the anti-opium propaganda posters in Canton always displayed skinny smokers dressed in rags, as a way to associate opium consumption with poverty.

65 Straits Settlements Opium Committee, *Proceedings of the Committee*, p. 13.

66 This phenomenon was observed in Java by Rush, 'Opium in Java', pp. 555–6.

67 Choy and Sugimoto, 'Staple trade, real wages, and living standards', showed that general living standards in Singapore improved in the interwar period due to the city's commercialisation and financialisation.

revised to take into consideration the impact of opium consumption upon users and their welfare. Since there were large populations of immigrant Chinese coolies in the region, both in urban and rural areas, it stands to reason that the conclusions of this study applies to them as well. In fact, real wages outside of Singapore were lower, which means that the living standards of opium smokers elsewhere in Southeast Asia were likely to have been even more dire. Whether or not this is so remains to be revealed by future research.