

7 Benchmarking economic performance, 1800–2000

Assessing the state *via* the economy

The state and state-builders exert influence and impact on the economy directly or indirectly as the prime mover in society (Chapter 1). It is therefore justifiable to judge the state and state-builders *via* economic performance, but not *vice versa*. This is because the economy cannot produce certain basic conditions such as peace and security, law and order, rights and entitlement on itself.

In measuring economic performance, GDP is by far the most convenient parameter. But GDP counting obscures differences in political and economic life across countries. A high GDP growth does not necessarily mean a better life for the general public, while a low GDP growth rate can be accompanied by high living standards (e.g. G7 economies after the Second World War).

Additionally, growth accounting is based on two tacit assumptions: first, all outputs have utility; secondly, the utility is always fully realised as the market always clears itself. Those who are familiar with the Stalinist economy will testify that either is valid. Carl Riskin thus views GDP as ‘a poor indicator of economic health in China’.¹ These concerns serve as a health warning.

Preliminary evaluation

Periodisation and data

The period from 1800 to 2000 can be divided into three slots: 1800–1936, 1937–1977, and 1978–2000 to capture changes in China’s state-building and economic performance. During the first period, China’s economic structure and private property rights remained relatively intact. The second period made economic growth very insecure. During the third period, China came full circle by re-establishing a market economy and by resuming its pursuit of modernisation which had began a century earlier.

Data availability and reliability have long been a common problem for the study of modern China. As late as the 1990s, only 70 per cent of state-run businesses, 40 per cent of rural enterprises, and 20 per cent of sole traders ever paid business taxes; and only 5 per cent of citizens paid an income tax.² So, a large share of the economic activities was not properly counted. Some figures are simply missing. For example, from 1953 to 1964 about 38 per cent of deaths were not recorded.³ To overcome the paucity of information, there is a common practice

of ‘data construction’. Official data are viewed optional. But data construction cannot avoid subjectivity. And, there is no agreed way to verify accuracy.

This study uses official figures as much as possible with the belief that all primary sources deserve the benefit of the doubt. This suits all the years prior to 1957 when official spin had little appeal to the state and state-builders because the economy was overwhelmingly private.⁴ In post-1957, data were subjective and free from independent and impartial monitoring. Maoist industry was particularly marred by chronic false reports on profits.⁵ Moreover, the Soviet accounting method used the artificial constant prices to obscure resource scarcity and productivity fluctuations to serve political purposes. The practice continued to some extent after Deng’s reforms.⁶ In a China-wide crackdown on data irregularities in 1994, of 70,000 cases, a third was related to data forgery.⁷ Even as late as 2000, data inflation in the state-owned sector was not uncommon.⁸ Special caution is thus required when one comes across the Maoist growth rates which appear not far behind the Asian Tigers’, although there has been no independent source to verify Maoist claims (Table 7.1).

Recent research shows a different picture: (1) from 1955 to 1979, China suffered 3 per cent annual decline in productivity;⁹ (2) from 1953 to 1978 the contribution of productivity to China’s growth was overall negative;¹⁰ and (3) the per unit cost in China’s industry increased all the time.¹¹ If so, one wonders how a fast growth could become possible at the same time.

In addition, economic figures were patchy for the Mao’s period either because they were politically sensitive or because they did not exist. For example, the Maoist state stopped releasing figures for household income after 1957. China’s National Bureau of Statistics was suspended during the Cultural Revolution. The key economic planning agencies, including the National Planning Commission, the National Economic Commission, Industry and Transport Department, National Price Bureau, Ministry of Labour and Ministry of Materials were all scaled down by about 90 per cent.¹² All the currently available ‘statistics’ for the Cultural Revolution years were back-dated.¹³ Not only is there no independent verification, these figures are not correlated (Table 7.2).

Table 7.1 Nominal growth under Mao in comparison with the Asian Tigers (annual %)

	<i>South Korea</i>	<i>Taiwan</i>	<i>Hong Kong</i>	<i>Singapore</i>	<i>China</i>
1960–1969	8.4	9.2	10.0	8.8	9.3
1970–1979	7.4	9.7	9.2	8.3	7.3

Sources: Simone and Feraru, *The Asian Pacific* (White Plains, NY: Longman, 1995), p. 181; WB, *World Development Indicators*, 2000 (W.D.C.: WB, 2002); NBS, *ZTN*, 1987, pp. 36–8.

Table 7.2 Different growth rates under Mao (annual %)

	<i>Total output</i>	<i>National income</i>	<i>GDP</i>
1953–1957	11.3 (100)	8.9 (100)	9.6 (100)
1958–1962	–0.4 (–)	–3.1 (–)	–8.6 (–)
1966–1970	9.3 (82)	8.3 (93)	5.9 (61)
1971–1975	7.3 (65)	5.5 (62)	5.9 (61)

Sources: NBS, *ZTN*, 1987, pp. 36–8; NBS, *ZTN*, 1989, pp. 29–31; NBS, *ZTN*, 2002, p. 51. Also, WB, *World Development Report 2000/2001* (New York: OUP, 2001), p. 294.

Most doubtful was the period of the Cultural Revolution which has been officially regarded as a political, cultural and economic all-in-one catastrophe (*haojie*). To begin with, normal economic strategy and planning were stopped and state administration was disintegrated. Intuitively, China's growth rate was negative. The only credible growth was probably in the military sector which was quarantined from chaos on Mao's order.¹⁴ Undoubtedly, some achievements stemmed from this: in the thick of the Cultural Revolution, China yielded nuclear bombs, long-range missiles and spy satellites. But this was an exception, not the rule.

In those sectors that the Cultural Revolution did touch on, severe damage occurred. China's workforce had no discipline because of Mao's policy of 'freeing workers from control, supervision and suppression' (*guan ka ya*);¹⁵ rules and regulations were condemned as the 'bourgeois dictatorship'; managers and technicians were suspended as 'whitesmiths' (*baizhuan*); all production command systems were derailed. From January 1967 onwards, workers were exhorted by Mao to take over factories and local governments. Large numbers of them joined street mobs.¹⁶ Factories and mines were deserted, including the most prestigious iron and steel complexes.¹⁷ In addition, China's urban workforce was at war between rival sects. Along the Yangtze River from Sichuan to Shanghai machine guns, cannons, explosives and tanks were all thrown in. Many factories were destroyed.¹⁸ In December 1966, two rival workers' groups armed with 10,000 assault rifles clashed in Chongqing (Sichuan). The fighting lasted for two years. In all, 10,000 cannon shells and a million rounds of bullets were fired. Every arsenal in that region was levelled to the ground.¹⁹ In another case, Wang Hongwen, a mob leader from Shanghai, led 100,000 followers in an attack and killed 2,000 of their rivals.²⁰ Wang, hailed as a national and party hero, was planted by Mao as Deputy-Chairman of CCP.²¹ Rural communes were geared towards class struggle at the expense of agricultural production.²² Rival sects were at war, too.²³ Even the People's Liberation Army stopped training. In 1968, each air force pilot flew an average of just 24 hours for the whole year.²⁴

Even if production continued, factories only rolled out shoddy products.²⁵ China's export goods were blacklisted for low quality.²⁶ Complaints were also made about the poorly made Chinese weapons.²⁷ Industrial labour productivity declined by about 40 per cent; returns on industrial investment dropped by 20 per cent.²⁸ In another account, compared with 1952, China's capital productivity plummeted by 64 per cent in 1978.²⁹

The post-Maoist official assessment is thus: 'The ten years of the 'Cultural Revolution' threw Chinese society into chaos and caused grave damage to the country's economy. ... At one time almost all state-run enterprises stopped production';³⁰ 'factories owned by the 'whole people' [i.e. the state] sustained the heaviest damage';³¹ 'after the damage caused by the Cultural Revolution, China had to import many basic things, including even grain, cooking oil and cotton'.³² More specifically, it was announced in 1978 by Premier Hua Guofeng that 'From 1974 to 1976, . . . we lost 100 billion *yuan* in industrial GDP, 28 million tonnes of steel, and 40 billion *yuan* of fiscal revenue. Our entire economy was on the brink of collapse'.³³ It is now agreed that the Cultural Revolution cost China 800

billion RMB *yuan*,³⁴ equivalent to China's 10 years' total GDP at the 1953 level or the total capital stock of the state-owned enterprises in 1979.³⁵

A recent study shows that the externalities of a change in leadership after Mao were responsible for about 2–6 per cent extra growth in the economy.³⁶ If so, Maoism *per se* was likely to attribute an extra –2 to –6 per cent to the growth rate. Mao's overall growth could well be negative.

Yet, allegedly, fast growth took place across the board.³⁷ 'Data' show that during 1966–1976, China's GDP growth was uninterrupted; state-owned enterprises yielded 352.3 billion *yuan* in profit; the industrial and commercial tax revenues rose to 249.1 billion *yuan*; and the Treasury had over one billion *yuan* budget surplus.³⁸ If true, these figures make post-Mao reforms completely unnecessary, as Tim Wright put it, 'If China's development was so smooth . . . why did China remain such a poor country [until Mao's death]?'³⁹ It reminds us of what Albert Feuerwerker and Tim Wright called, China's growth was written to suit the party.⁴⁰

Adjustment for the Cultural Revolution decade

To make sense of the Cultural Revolution, we have to find a similar period in which reliable data were available. Mao managed to wreck the economy more than once, which gives us chances.

Relatively reliable data are available for the Great Leap Forward. This was because Mao still allowed his bureaucracy to function at that time. The tree-year disaster reduced China's labour productivity by 40 per cent and China's GDP growth rate by 18.2 per cent (from 9.6 per cent per year in 1953–1957 to –8.6 in 1958–1962).⁴¹ The aforementioned 40–64 per cent decline in productivity during the Cultural Revolution could set China's annual GDP to the negative territory ($5.9 - 18.2 = -12.3$).

We can justifiably discount the official growth rate of 5.9 per cent by half to reflect the damage of the Cultural Revolution. This is a very generous, as it allows the growth rate to be positive in line with the 'Hindu Equilibrium'.⁴² Similar discounts have been applied by other scholars.⁴³

Sectoral reorientation

An equally serious problem, which has often been overlooked, is how to interpret the sectoral performance during the Maoist period. It has been commonly accepted that about a quarter of China's annual GDP was reinvested in the state sector. It is also known that from 1957 to 1978 the state capital assets to GDP ratio (hence the asset yield level) was about 1:1.⁴⁴ It means that a quarter of China's GDP worth investment would increase China's GDP by a quarter, *ceteris paribus*. Theoretically, after 25 years, China's capital stock should have grown 265 times its original size of 24.1 billion RMB *yuan* in 1952 (constant price) to 6,390 billion *yuan* in 1977 (constant price).⁴⁵ China should have been fully industrialised several times over. However, the registered state-owned fixed capital assets in 1978 were mere 448.2 billion *yuan* (constant price).⁴⁶

Similarly, with the widely publicised official figure of 7–9 per cent annual growth in GDP, by 1978 Mao's economy should have been 7–12 times as large as that of 1949. During that period the population only doubled. So, China's per capita GDP should have been 3.5–6 times higher than 1949 in real terms. The extra wealth would also allow China to become fully industrialised.⁴⁷ It was not the case.

It is thus questionable whether Mao's industrial sector genuinely grew that much,⁴⁸ because China's employment structure remained distinctively pre-industrial (Table 7.3). Here, the sheer weight of China's agricultural workforce was not that different from the republican period in 1946 (75 per cent),⁴⁹ or Meiji Japan in 1872 (72 per cent), Tsarist Russia in 1914 (75 per cent) and colonial India in 1901 (65 per cent).⁵⁰ These economies did not yet manage to have their industrial take-off. Mao's China was no exception. Only in the 1990s, with the share of China's rural employment dropping to 50 per cent,⁵¹ did China's employment structure resemble that of Romania, Thailand, Indonesia and Pakistan.⁵² More revealingly, not only did Mao's industrial labour force grow 32 per cent slower than that of China's national employment,⁵³ it lagged 13 per cent behind China's population growth (Table 7.4). So, the economy was not industrialising fast at all.

If this is not enough, Mao's China had trouble to keep the existing industrial workforce employed. At the end of Mao's era, 30 per cent of industrial workers were technically redundant.⁵⁴ They were finally laid off in the 1990s (*xiagang*).⁵⁵

Such lack of employment opportunity in the industrial sector was highly consistent with restrictions on city-bound migration and job-seeking as well as repeated schemes of re-ruralisation.⁵⁶ By 1976, about 95 million had been de-urbanised (Table 7.5). But the problem was not solved. In 1977, the urban sector built up another 15 million waiting for jobs (*daiye*).⁵⁷ The number was soon doubled to 30 million in 1980.⁵⁸

On the other face of the same coin, from 1956 to 1978, the number of towns and cities in China dropped by 30 per cent.⁵⁹ The trend was reversed only after 1978. As

Table 7.3 China's employment structure, 1952–1975

	1952	1975	% Annul growth
Working population (in million)	207.3	381.7	2.7
Primary sector (% in all)	83.5	77.2	–0.3
Secondary sector (% in all)	7.4	13.5	2.6
Tertiary sector (% in all)	9.1	9.3	0.09

Source: NBS, *ZLTN*, 2004, p. 7.

Table 7.4 Stagnation of China's modern industrial workforce (in millions), 1959–1974

	Industrial workforce (A)	Total population (B)	A/B (%)
1959	45.5	672.1	6.8
1974	59.1	908.6	6.5
Annual (%)	1.76	2.03	0.9

Source: Industrial workforce is based on NBS, *ZLTN* 1998, p. 81. Chinese population, NBS, *ZTN*, 1986, p. 91. Also, Li, *Social Stratification and Income Inequality* (Xiamen: Lujiang, 2000), p. 69.

Table 7.5 Mao's de-urbanisation, 1950–1976

<i>Urban residents 'sent down' to rural China</i>	
1950–1959	21,025,000
1961–1976	73,700,000
Total	94,725,000

Source: Qiu, 'De-Urbanisation in China, 1949–1978', *Social Sciences Bulletin* 3 (2006): 171–6.

China progressed fast in real industrialisation, the number of towns reached a historical height of 50,000 in the late 1990s.⁶⁰

Could this lack of growth in industrial workforce and urbanisation mean that China got progressively more output per industrial worker? If so, China's technology needed to play a vital part. However, as far as one can tell, technology contributed negatively (–1.2 per cent a year) to the GDP growth during Mao's era.⁶¹ To reflect that, from 1957 to 1978, China's capital productivity increased –3.1 per cent a year; total factor productivity, –1.4 per cent a year;⁶² and output from per unit energy, –1.8 per cent a year.⁶³ In contrast, in the post-Mao's era, technology contributed on average 38 per cent of China's industrial GDP growth.⁶⁴

If Mao's industrial sector was too small to absorb new workers, and technology too weak to generate growth, where did China's industrial growth come from? There was a notion of 'industrialisation in the rural sector', called 'walking with two legs' (*liangtiao-tui zoulu*). But this remained a lip service. Under Mao, food production was given all the priority (*yi liang wei gang*). Food crops accounted for 95 per cent of the rural GDP.⁶⁵ To serve that end, the existing rural industry was banned.⁶⁶ So much so, in the later 1970s, up to half of China's rural workforce was 'unnecessarily employed in agricultural work'.⁶⁷ Only after Mao's rule ended did township and village industrial enterprises take off; and, the urban sector simply could not get enough rural migrant workers (*mingong*).

Our doubt also comes from the nominal GDP distribution for 1977: 20 per cent of the workforce in industry produced 51 per cent of China's total GDP while 77 per cent of the workforce in agriculture generated only 29 per cent of it.⁶⁸ The GDP productivity gap was about seven to one. If true, this should have created enough incentives for Mao's economic planners to send as many people as possible into industry for more GDP growth. With a quarter of China's GDP at disposal of Mao's state every year, such economic transition should not have been too hard. Why did this not happen?

What is missing so far is the compulsory transfer of GDP from the agricultural sector to the industrial one, which distorted the entire sectoral GDP accounting. The practice is known as 'scissors price differentiation' or 'scissors pricing' (*jiandao cha*). It was copied from the Soviet Union where the state reaped economic rent *via* arbitrage with monopsonic procurement of agricultural outputs at a low price on the one hand and monopolistic sale of industrial goods and services at a high price on the other. The gap between the two prices had a tendency to increase over time like opened scissors' blades, and hence the term.

In the Soviet Union, the gap between the two prices was 200 per cent in 1947.⁶⁹ There is no information about the exact price differentials in Mao's China. But it

was officially stated in 1962 that the low government procurement prices cost the agricultural sector 6–7 billion RMB *yuan* per year.⁷⁰ A joint 1963 decree between CCPCC and State Council suggested that the price level for rural products needed to increase by 30 per cent while the price level for industrial products needed to drop by 20 per cent.⁷¹ It was announced in detail later in 1965 that the state procurement prices for agricultural products were only 45–52 per cent of the market ones.⁷² Finally, it was officially announced in 1978 that the price of grain needed an increase of 70 per cent and industrial goods' prices a decrease of 15 per cent to strike a balance between the two sectors.⁷³ It meant that in the case of the 1970s the Chinese peasantry had to pay 150–185 per cent of the market price for industrial goods and services.

To the ordinary peasants, this scissor pricing took the form of selling their produce to the state below production costs. According to national surveys of 1976–1977, the government procurement prices for six main food products were 7.3 per cent below their production costs and 2,100 other rural items were 15 per cent below their production costs.⁷⁴ For example, by law, each time when a pig was slaughtered by a rural household, the state compulsorily purchased 60 per cent of the meat at half the market price.⁷⁵

If we use, say, 70 per cent as the appreciation rate for the agricultural sector and 15 per cent as the discount rate for the industrial sector, the 1977 industrial share should be 44 per cent of China's total GDP; and the agricultural share, 50 per cent. The GDP per worker gap between the two sectors should be about 3.4 times, half of the nominal value of seven. This was not too different from the GDP ratio between the two sectors during the republican period when scissors pricing was absent.

Measuring performance

Now, to map out China's growth and yet to keep free from the common problem of arbitrary selection of base years, we can establish first of all a long-term counter-factual GDP benchmark. It is known that the economy grew 0.9 per cent a year from 1750 to 1830, and 1.2 per cent a year from 1887 to 1936, averaging 1.05 per cent a year.⁷⁶ This unpretentious average rate can produce a counter-factual linear growth over time (marked as *B*). China's real-time GDP growth index (marked as *A*) can be set against this benchmark; and the ratios between the two (*A/B*) measure the real growth performance. For the period before 1952 all figures are selected as close to the constant price as possible. All the post-1952 figures are at the constant price. Figures in brackets are nominal rates before discount (i.e. 5.9 per cent). China's real take-off occurred after 1977 (Table 7.6).

To double check the assessment, we can use China's population data to reflect the size of the economy. The beauty is that population data are more accurate than GDP because few agents had incentives to cheat on population size. In fact, Mao's mottos prevented such cheating: 'Under the leadership of the Communist Party as long as we have more people, we can do wonders';⁷⁷ 'a larger population can get more done'.⁷⁸ Until 2000, China's population continued to grow at a more or less stable speed despite the draconian one-child policy of post-1970.

Table 7.6 Benchmarking China's GDP performance, 1830–2000

	(A)	(B)	A/B
1830	100	100	1.00
1887	93	181	0.51
1914	121	240	0.50
1936	167	303	0.55
1946	76 ⁷⁹	336	0.23
1952	167	358	0.47
1962	189	397	0.48
1972	249 (334)	441	0.56 (0.76)
1977	285 (446)	463	0.62 (0.96)
1982	1,304	489	2.67
1992	6,555	543	12.07
2000	21,690	590	36.76

Sources: Dong, *Analysis of China's Economy, 1949–1952* (Beijing: CSSP, 1996), pp. 365–70; Liu and Yeh, *Chinese Mainland*, p. 67; NBS, *ZTN*, 1987, pp. 36, 43; *ZJN*, 1989, p. 29 and *ZTN*, 2002, p. 51.

Note: Dong's base year is 1936; Liu and Yeh's, 1933. It is commonly agreed that in 1952 China's GDP recovered to the 1936 level.

China's population growth rate from 1766 to 1812 was 1.2 per cent a year; it slowed to 0.5 per cent a year from 1812 to 1833 (before the heavy population losses caused by the empire-wide unrest).⁸⁰ The average rate is 0.85 per cent which can be used to establish another counter-factual linear growth (marked as β). China's real-time population growth index is lined up for comparison (marked as α). The ratios between the two (α/β) measure the real growth performance in population. Until a family planning policy was imposed in 1970 (italicised), China's population growth fell below the counter-factual benchmark, compatible with our GDP observation (Table 7.7).

Table 7.7 Benchmarking China's population growth performance, 1830–2000

	Census number	(α)	(β)	α/β
1833	398.8 million	100	100	1.00
1887	377.6	95	158	0.60
1911	368.1	92	194	0.47
1928	451.8	113	223	0.51
1936	479.1	120	239	0.50
1946	455.6	114	260	0.44
1949	540.0	135	267	0.51
1952	574.8	144	274	0.53
1962	673.0	169	298	0.57
1972	867.3	217	324	0.67
1977	947.7	238	338	0.70
1982	1,016.5	255	353	0.72
1992	1,171.7	294	384	0.77
2000	1,267.4	319	411	0.78

Sources: Data for 1766–1887, see Deng 'Official Census Data', Appendix 2. Data for 1928–1946, see Cao, *Demographic History*, vol.6, pp. 257, 266, 274. Data for 1952, 1962 and 1972 are based on NBS *ZTN*, 1986, p. 91.

Table 7.8 Benchmarking China's *per capita* GDP performance, 1830–2000

	A/α (γ)	B/β (δ)	γ/δ
1830/3	1.00	1.00	1.00
1887	0.98	1.15	0.85
1911/4	1.32	1.24	1.06
1936	1.39	1.27	1.09
1946	0.67	1.29	0.52
1952	1.16	1.31	0.89
1962	1.12	1.33	0.84
1972	1.15 (1.54)	1.36	0.84 (1.13)
1977	1.20 (1.87)	1.36	0.88 (1.38)
1982	5.11	1.39	3.68
1992	22.30	1.41	15.82
2000	67.99	1.44	47.22

Sources: The same as Tables 7.6 and 7.7

Finally, we calculate the *per capita* GDP performance index (A/α) versus the *per capita* counter-factual linear benchmark (B/α). Considering two per cent a year in *per capita* growth as the normal modern growth rate in the non-communist world, our counter-factual linear benchmark rate is truly modest.⁸¹ Again, figures in brackets are nominal rates before discount. The result shows again that real take-off began after Mao (Table 7.8).

Final evaluation

China did not realise its growth potential until the 1980s. In terms of China's *per capita* GDP, the empire-wide unrest in the 1850s–1870s cost 15 per cent of China's potential (1887); the republican period enjoyed a modest growth, 9 per cent above China's potential (1936). The Japanese invasion cost about half of China's potential (1946); the 1946–1949 Civil War, the Great Leap Forward and the Cultural Revolution cost 11–16 per cent of that potential.

In the next three chapters, we will scrutinise China's growth performance period by period in detail and reveal the factors and mechanisms behind such performance.