

CHINA'S POPULATION SIZE DURING THE MING AND QING: A COMMENT ON THE MOTE REVISION

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The state of China's late-imperial population history is in disarray. As recently as five years ago, the story seemed sufficiently clear that John McNeill could confidently write in an introductory first chapter to *The Sediments of Time* that China's history could provide the rest of the world's environmental historians with important perspectives on the problem of "the relationship between population and environment." "China is a good place to try to find out," McNeill said, "because population history is fairly clear, the contours of environmental change itself are becoming clear, and the role of additional important variables such as technology and state action are (comparatively speaking) very clear."¹ When *The Sediments of Time* was published, that may well have been a reasonable research project.

But in short order Frederick Mote has proposed a radical upward revision of figures for China's Ming and early Qing population,² which, if true, would cause an equally radical rethinking of China's environmental history in late imperial times. For the mid-19th century, Cao Shuji has proposed a radical upward revision of the death toll from the various

¹J. R. McNeill, "China's Environmental History in World Perspective," in Elvin and Liu eds., *Sediments of Time*, 48.

²Those provided by Ping-ti Ho, *Studies on the Population of China* (Cambridge, MA: Harvard University Press, 1959); Dwight Perkins, *Agricultural Development in China* (Chicago: Aldine, 1969); and Kang Chao, *Man and Land in Chinese History* (Stanford: Stanford University Press, 1986).

disasters to as much as 118 million by 1877.³ And as for the demographics driving that population history, James Lee and Wang Feng have proposed replacing the mortality-driven Malthusian storyline with one controlled more by preventive checks in response to general economic conditions and opportunities.

So, contrary to what McNeill had hoped, China's environmental history is in no position to begin working out the relationship between population and environmental change, at least until we get the story straight on population. As it turns out, I largely agree with Lee and Wang, have only seen references to Cao Shuji's work but not the actual study itself, and thus will confine my remarks here to the revisions proposed by Frederick Mote. Since Mote bases his population numbers on those produced by Martin Heijdra in his 1995 PhD thesis, it is perhaps more accurate to call this the Mote/Heijdra revision.⁴

Basically, Mote/Heijdra propose increasing the base figure for the early Ming by up to 40% greater than the figures used by He Bingdi or Kang Chao, from 60 million to 85 million. Then, assuming annual rates of increase that range around 5-6 per thousand per year, they see the Ming total rising to 231 million by 1600, to 250 million by 1650, and to 275 million by 1700, all of which are substantially higher—in some cases 50 to 100 million more--than anyone else's figures. They do accept others' figures of about 420 million for 1850 (although Skinner has proposed 380 million for 1850). (You can see what happens to the usual story for the century from 1850 to 1950 if in addition Cao Shuji's figures are accurate.)

Mote/Heijdra revise not just the population totals, but also the annual rates of growth. As William Lavelly and Bin Wong noted a few years ago, analysts of China's population history varied widely in their estimates of the population *size*, they largely agreed on the *rates* of growth.⁵ Mostly, those rates of growth ranged from 3 or 4 per thousand until the 18th century when

³ Cao Shuji, *Zhongguo renkou shi, di wu juan: Qing shiqi* (Shanghai: Fudan daxue chubanshe, 2001), cited in Philip Huang, "Development of Involution in eighteenth Century Britain and China?," *Journal of Asian Studies*, forthcoming.

⁴F. W. Mote, *Imperial China 900-1800* (Cambridge MA: Harvard University Press, 1999); Martin Heijdra, *The Socio-Economic Development of Ming Rural China (1368-1644): An Interpretation* (Princeton University Ph.D. thesis, 1995).

⁵William Lavelly and R. Bin Wong, "Revising the Malthusian Narrative: The Comparative Study of Population Dynamics in Late Imperial China," *Journal of Asian Studies* 57.3 (Aug 1998): 714-48.

they rose to 7-8 per thousand, dropping again in the 19th century. The Mote/Heijdra revision, to the contrary, projects the highest rates of growth in the early Ming of 5-6 per thousand, dropping to 2-3 per thousand for most of the Qing.

The Mote/Heijdra figures thus call into question the accepted storyline of the Qing population explosion, and of restrained population growth during the Ming. In their view, population during the Qing grew at a rate of less than 3 per thousand per year on average, or about half the rate they project for the Ming. In other words, if Mote/Heijdra are right, China's population during the Ming was both larger and grew faster than previously thought, while during the Qing, the population increase was much less than previously believed.

Table 1. Estimates of China's Late Imperial Population (millions)

Year	Perkins		Chao		Mote/ Heijdra		Brook		Lee and Wang		Skinner	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
1393	80	65		60	85		75	65				
1500					155		125					
1600	200	120	200		231		175					
1650	150	100		70	268	231						
1700					275				200	150		
1750	250	200							225			
1776			268									
1800			295		360							
1850	435	385	427		430	420						380
1900									500			
1953	598	568							580			

Let's acknowledge at the outset that there is a huge black hole in China's population data for the 400 years between 1393 and 1776, so that our levels of uncertainty about any reconstruction must be very high.⁶ That

⁶Tim Brook, for instance, has recently estimated Ming population totals slightly higher than earlier projections, but substantially lower than Mote/Heijdra. See *The Confusions of Pleasure: Commerce and Culture in Ming China* (Berkeley and Los Angeles: University of California Press, 1998): 28, 95, and 162.

being said, Mote/Heijdra have proposed population totals for the late Ming (1600-1650) anywhere from 20% higher (than Perkins' high estimate for 1600) to 350% higher (than Chao's low estimate for 1650) than anyone else.

So, what are we to make of the Mote/Heijdra revision?

Let's start by taking a closer look at how their estimates have been derived. For this, I will use Heijdra's dissertation, for that is the basis of Mote's published figures.

Heijdra starts off by increasing the 1380 base figure from 60 to 85 million, citing as his source a 1938 Japanese study by Yokota Seizo who argued that there was likely an under-reporting of 5 million people in the north, 10 million women and children nationwide not reported, and another 10 million uncounted in Sichuan, the coastal provinces, and other peripheral provinces (p. 52). A few pages later, however, that 85 million in 1380 becomes 85 million in either 1393 or 1400, depending on how you read one of his tables. Mote uses 85 million in 1393.

Now, it matters whether the 85 million base figure was in 1380, 1393, or 1400, for the difference is an entire generation of 25 million people reproducing or not. If the date for using the 85 million base figure was either 1393 or 1400, as Mote suggests, then by back projection (using Heijdra's rates of increase) the total in 1380 was not 85 million, but something like 71 million--11 million, not 25 million--more than the official figure of 60 million (and about 18 percent higher than the official figure of 60 million). Tim Brook, on the other hand, estimates 75 million in 1393; back-projecting to 1380 (assuming a 5 per 1000 annual rate of increase) yields 66 million, or 10 percent more than the official figure.⁷ The point I wish to make, though, is not that Heijdra's figures differ from Brook or earlier studies by Ho, Perkins, or Kang Chao, but that Heijdra seems confused as to which date to apply his 25 million increase in the Ming population base: 1380 or 1393.

Let's take a look next at Heijdra's projections for the late Ming. Hypothesizing varying but decreasing growth rates for the periods 1380-1500, 1500-1600 and 1600-1650, Heijdra projects population size in 1600

⁷Data I collected from Hainan Island, for instance, suggests that the Ming 1380 total did in fact exclude the non-Han population, an undercount of about 25% in 1380, but that those not counted in 1380 probably were counted in 1393.

ranging from a low of 185 million to a high of 289, and in 1650 from a low of 204 to a high of 353. Heijdra states (p. 54) that he thinks the actual population was somewhere between his high and middle projections, the mid-point of which would be 260 million in 1600 and 311 in 1650. (Parenthetically, Mote, who says Heijdra's figures are "a convincing working hypothesis," decides to use a figure of 250 million for 1650 (pp. 903-06), that is, 61 million, or 20% less than Heijdra.)

What is surprising here is that Heijdra sees the population increasing during the first half of the 17th century, right through the Manchu conquest. Where other historians calculate a population loss over those decades caused by declining harvest yields, epidemic disease, and warfare, Heijdra sees those "positive" checks merely slowing the growth rate to about 3 per 1000, a rate about the same as Mote projects for the 18th century. To me, it just doesn't seem to make any sense to think that China's population grew at the same rate in the peaceful 18th century as in the much more difficult conditions of the 1620s, 30s, or 40s. The evidence for the loss of life during and after the Manchu conquest seems to me to be so overwhelming that it cannot be denied. But was the loss so great as to cause China's population to decline during the Ming-Qing transition? The jury may still be out on that, but from what I know of Lingnan during the transition, the likelihood is greater that the population declined than any of the other alternatives.

That leads me to a comment about the method Heijdra used to arrive at his projections: it is an aggregate, top-down approach, assuming rates and figures for China as a whole. While Heijdra does recognize regional differences, he did not do a reconstruction of population from the bottom up, using whatever county-, prefectural-, or provincial-level data is available. To be sure, those data are scattered and mostly anecdotal, but for my money I think that using local or regional approaches will be the only way to tell how much the population did decline from 1600 to 1650 (or thereabouts).

So, I think there is good reason, based on both their internal logic and the available evidence, to be skeptical of the Mote/Heijdra revision. That doesn't mean that we shouldn't go back and re-examine the projections used in Ming and Qing regional studies (mine included), or conduct new ones with the Mote/Heijdra challenge in mind. To settle these matters, we probably need a workshop where people with expertise in various parts of China get together, work out local or regional population estimates, and

then aggregate those into national totals. My guess is that when we do, we might wind up moderately increasing our late-Ming early-Qing estimates, and thereby having to lower our projections about the rate of increase during the early- to mid-Qing, but we will still be left with a hefty population increase from 1700 to 1850, one certainly large enough to warrant remaining in our explanatory bag.

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