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World population 1800-1938:
a new-born estimate

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Motivation(s)

i) for historians: the number of people is a key information on any society

ii) The motivation for demographers: without data on birth and death rates, yearly series of population are the least bad measure of the demographic transition

iii) The motivation for economists: demographic transition is a key component of unified growth theories
The conventional wisdom (only ‘original’ estimates)

<table>
<thead>
<tr>
<th>Source</th>
<th>1800</th>
<th>1850</th>
<th>1900</th>
<th>1920</th>
<th>1930</th>
<th>1950</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willcox (1940)</td>
<td>919</td>
<td>1091</td>
<td>1571</td>
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<td>1995 §</td>
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<td>Carr-Saunders (1936)</td>
<td>906</td>
<td>1171</td>
<td>1608</td>
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<td>2057°</td>
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<td>Swaroop (1951)</td>
<td>728</td>
<td></td>
<td>1171</td>
<td></td>
<td></td>
<td>2378d</td>
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<tr>
<td>Bennett (1954)</td>
<td>919</td>
<td>1163</td>
<td>1555</td>
<td></td>
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<td>2368d</td>
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<td>Clark (1967)</td>
<td>890</td>
<td></td>
<td>1668</td>
<td></td>
<td></td>
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<td>McEvedy and Jones (1978)</td>
<td>900</td>
<td>1200</td>
<td>1625</td>
<td></td>
<td></td>
<td>2500</td>
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<tr>
<td>Biraben (1979)</td>
<td>954</td>
<td>1241</td>
<td>1633</td>
<td></td>
<td></td>
<td>2520</td>
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<tr>
<td>Klein Goldewijk and Battjes (1995)</td>
<td></td>
<td></td>
<td>1638</td>
<td>1914</td>
<td>2084</td>
<td>2511</td>
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<tr>
<td>League of Nations/UN</td>
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<td>1834</td>
<td>2008</td>
<td>2532</td>
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<tr>
<td>UN 1999</td>
<td>980</td>
<td>1260</td>
<td>1650</td>
<td>1860</td>
<td>2070</td>
<td>2520</td>
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<tr>
<td>Maddison (2010)</td>
<td>1042*</td>
<td>1276</td>
<td>1563</td>
<td>1863</td>
<td>2299#</td>
<td>2528</td>
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<tr>
<td>HYDE 3.1</td>
<td>990</td>
<td>1263</td>
<td>1654</td>
<td>1912</td>
<td>2092</td>
<td>2545</td>
</tr>
</tbody>
</table>

* 1820; ** 1870; § 1935; ° 1933; #1940
Problem(s)

i) Data for benchmark years for all countries or for most of them (Maddison)

ii) Mostly top-down approach (total population by continent, not by political entity), from unclear sources

iii) Bottom-up estimates for vaguely defined areas (Mc Evedy Jones 1978) or for polities at 1995 boundaries (Maddison)

iv) They neglect most recent research (Maddison’s estimates of the 1990s)
Aim of the project

Estimating yearly series of population at current borders from 1800 to 1938 for all existing polities – and thus computing world population bottom-up
Sources

i) modern estimates of yearly series, based on registers population – usually taken from ‘standard’ sources (e.g. Historical Statistics USA)

ii) Linear interpolation between censuses, adjusting original figures whenever necessary

iii) Backward projections with (location-specific) data on crude birth/death rates (Galloway 1994 for Italy)

iv) Estimates from tax records, military rolls and the like

v) Guesstimates (e.g. from Western travellers and/or consuls)
The case of Africa

i) no data for (almost all) Subsaharian Africa before conquest

ii) Censuses after conquest – interwar years almost complete, on paper, but systematic undervaluation

iii) Thus pioneering work by Manning (2010): extrapolation backwards from 1950 (census assumed reliable) with assumed growth rates – baseline equal to India, adjusted according to local conditions

iv) More recent work by Frankema and Jerven (2015): extrapolation from 1960 with different adjustment of Indian rates
The situation so far

i) very preliminary estimate completed for all polities, as part of the research project on trade with Antonio Tena [Carlos III]
ii) Data from secondary sources collected
iii) I am revising the preliminary estimate
iv) Still to do: quality assessment (Durand) and the interval of confidence (Feinstein)
In particular

i) Series for advanced countries ready

ii) New series for South America from Yanez et al (2014) and for Caribbean Bulmer Thomas (2012)


v) Large countries European periphery and Asia ‘ready’

vi) Small countries in all continents and area consistency (double counting, omissions) still in progress: will they make any difference?
Main results: the new series
A comparison with other estimates, 1800
A comparison with other estimates, 1850
A comparison with other estimates, 1850
Shares by continent?

![Graph showing shares by continent from 1800 to 1925. The x-axis represents years from 1800 to 1925, and the y-axis represents share values from 0.0 to 1.0. The graph is color-coded, with different continents represented by distinct colors. The continents labeled are Asia, Europe, America, Africa, and Oceania.](image-url)
The demographic transition?
Four big countries (log scale)

- United States
- India
- China
- Russia
Conclusions

i) Conventional wisdom captures the big picture

ii) But it misses the big crises (Tai’ping, WWI+Spanish influenza) and thus it undervalues the potential growth of population

iii) Population growth in some agrarian societies, with abundant land (Russia) but also with limited supply (China, India after ca 1850) – demographic transition?
But

everything is provisional...

Thank you for holding your breath