

# What is the Optimal Global Population?

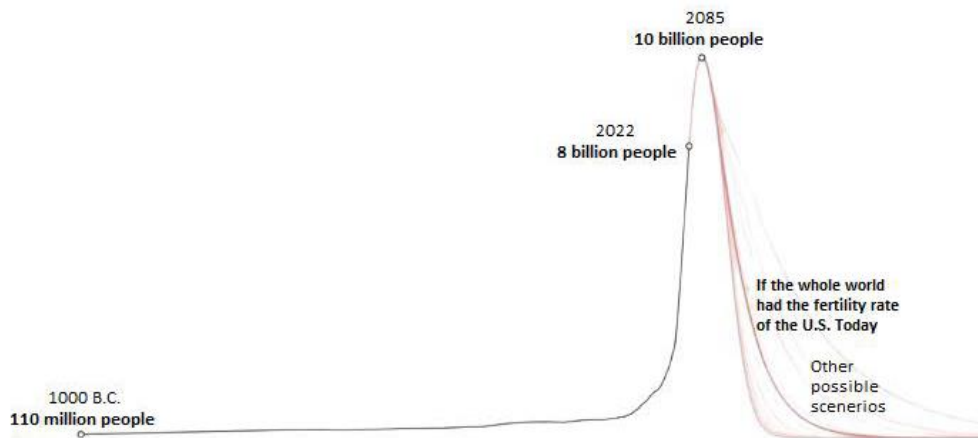
## I.

Arguments around a society's optimal population have framed some of civilization's most contentious debates for thousands of years, deriving their ideas from philosophy, economics, political theory, and theology. As early as 350 BCE, Plato specified 5,040 citizens as the optimal population for a city-state because of land and resource availability<sup>i</sup>. Kautilya, his contemporary philosopher-statesman in India, viewed demographics through the prism of political stability<sup>ii</sup>. Medieval Islamic<sup>iii</sup> and Confucian<sup>iv</sup> scholars focused on balancing population with an eye on social cohesion and harmony, and the great theologian Thomas Aquinas found the pursuit of social justice to be inseparable from any discussions about a society's ideal population<sup>v</sup>.

Even as declining mortality rates in the late 1700s caused the rate of population growth to accelerate<sup>vi</sup>, Malthusian concerns remained enveloped – as the historical debate on this issue had always appeared to be – in the benign search for economic optimality between natural resources and a steady-state population such resources could support.

However, over the last 200 years, as innovations in healthcare, sanitation, and neonatal care reduced infant mortality, the global population grew exponentially, and the tone of discourse turned bleaker. Population rose from about 800 million in 1798 – when Malthus wrote a highly influential essay claiming poverty and degradation were the inevitable result of unchecked population growth - to an unprecedented eight billion in 2022<sup>vii</sup>. This growth upended all projections about optimality, resource availability, and steady-state assessments of the global population.<sup>viii</sup>

Given that the developing world witnessed the highest population growth rate, economic pressures in these poorer countries created extraordinary levels of emigration into the West. This gave rise to sentiments best crystallized in the “Rivers of Blood” speech by Enoch Powell and the entry into the political vocabulary of the United States in the 1980s of words such as national culture, xenophobia, and identity.<sup>ix</sup>



**Figure 1. Unintended consequences of better healthcare, sanitation & women’s rights: an astounding spike in the global population.** Historical data for the top line chart came from Our World in Data. The projections are by Dean Spears, Sangita Vyas, Gage Weston, and Michael Geruso<sup>x</sup>.

Ironically, at the other end of the spectrum, developing nations panicked and focused their efforts on controlling reproductive autonomy. In the mid-1970s, India experimented with forced sterilization of men<sup>xi</sup>, and China instituted a brutal one-child policy in 1979,<sup>xii</sup> both with grievous and unforgivable human consequences. Questions about optimal global populations are not merely economic; they go to the heart of what makes us human. Restrictive policies of the past few decades originated from misreading population growth data, and also because they ignored the human emotions that scaffold our deepest, most profound ambition: procreation.

However, over the last decade, it has become apparent that we now face an astonishing reversal: The world’s population is expected to shrink to about two billion within the next 200 years. This decline is likely to occur at a rate of decline that will be as rapid as its rise (See Figure 1). This period of uncertainty and flux will give rise to a lot of policy action, and if we continue to frame the question in narrow terms, we risk making bad policies again.<sup>xiii</sup>

What can we learn from the mistakes of economists and governments in the past who, in their search for answers to questions about an optimal global population, ended up instituting tyrannical policies and seizing individual rights? How can we give more credence and faith to our own ingenuity, which



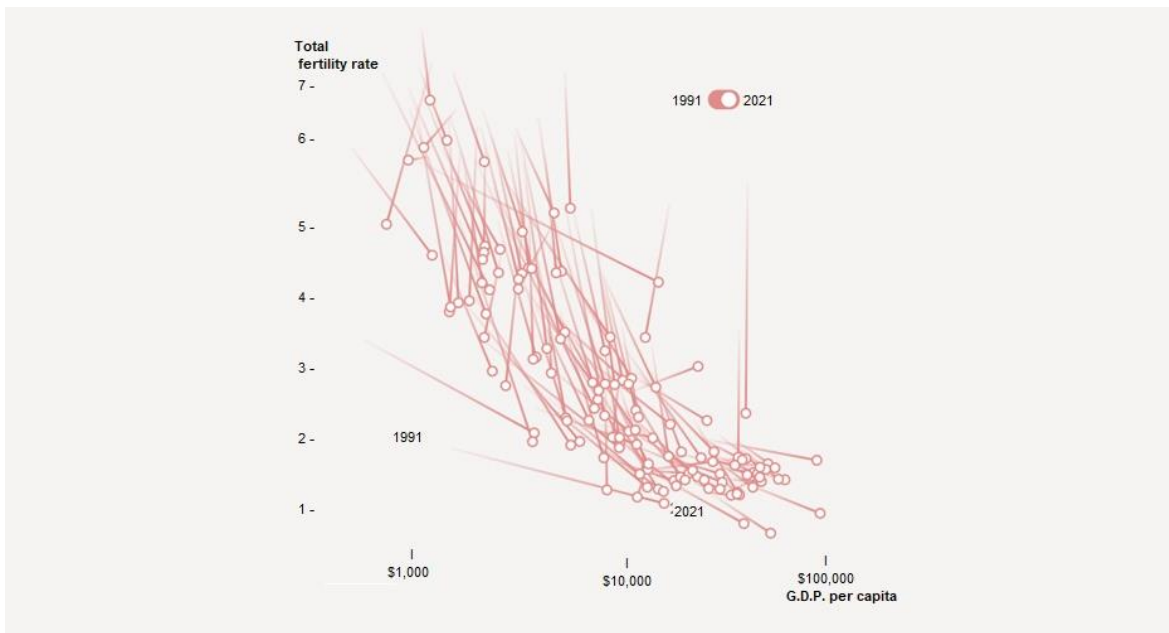
by governments, in no country where the TFR has slipped below replacement levels has it ever risen again<sup>xix</sup>.

**Rate of Population Decline With a Fertility Rate of 1.0; Average Age of Conception Assumed as 27 yrs.**

Yr	Population	1	2	3	4	5	6	7	8	9	10
1	20	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F
27	10.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
54	5.0		1.0		1.0		1.0		1.0		1.0
81	2.0		1.0			1.0			None		
108	1.0		1.0								

**Figure 2. The effects on a closed-loop society with a Total Fertility Rate of 1.** In this example (as modeled by the author), it takes only about 100 years to witness a 20x decline, i.e., if in a society there are only 10 couples and each has 1 offspring, society will have only one inhabitant after 100 years. (For a country-by-country TFR, see Figure 3. The US has 1.66; South Korea is 0.67). *Source: Author.*

This decline will have profound social and economic consequences, as has already begun to be witnessed in countries such as Japan and Italy where the TFR is below replacement levels. Stranded real estate and vacant villages are just the beginning of a long-term trend. Smaller working populations and a deflationary economy will restrict society's capacity to provide pensions for its



**Figure 3. The decline in Total Fertility Rate is a universal phenomenon.** GDP, social and cultural mores, or religion do not affect it. *Chart: Dean Spears*

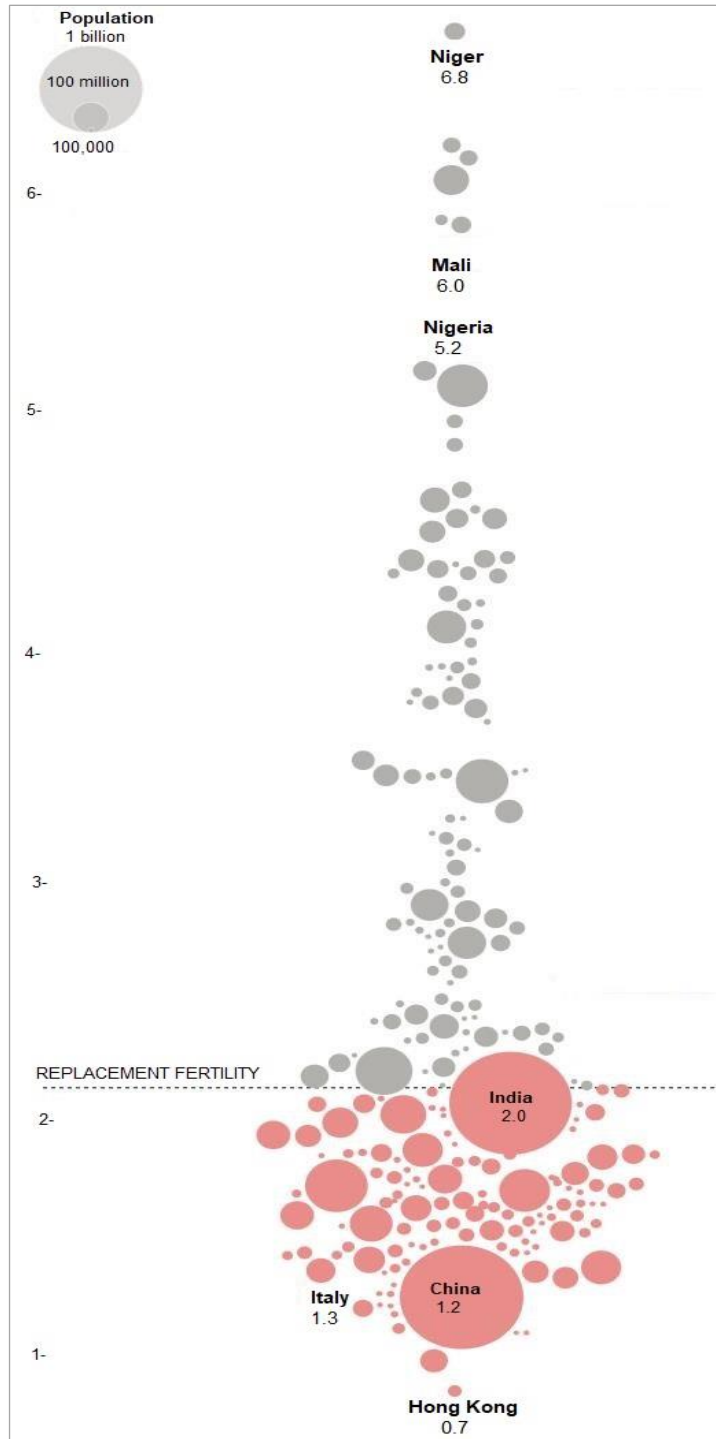
senior citizens or for living standards to grow. The decline will be relentless: As evidence in Figure 3 shows, it is prevalent in rich and poor countries alike, in the East and the West.

In the face of such inevitability, it is likely that the past will repeat itself, and societies will be unable to resist the vain and enthusiastic siren song of ‘action.’ We may even be condemned, as were the people of China in the 1970s, upon whom the one-child policy was brutally enforced, to treat the female body as the arena for all battles.

At its core will be the search for a fundamentally unknowable balance between individual rights on one side, and economic, cultural, and social ambition on the other. Long before we arrive at an answer, we will know how deeply tyrannical a state we are willing to accept.

### III.

There will be no single solution for the world. Each constituent country will seek its own balance for the following key issues.



**Figure 4:** Even though it is declining, fertility rates in Africa will remain high for decades, and Africa and Asia’s total population will become a substantial portion of the world. Conversely, the populations of Europe and North America will decline in relative terms. This demographic shift will have profound effects on the racial composition of the world. *Chart: Dean Spears*

**Optimal Immigration Equilibrium:** Unequal population decline rates (as shown in Figure 4) will intensify and harden immigration patterns. Certain people-deficit nations will voluntarily seek immigrants (such as Japan or the UAE of today). On the other hand, poor nations with poor economic prospects, victims of climate change, and surplus labor will force their way through national borders, as Europe has witnessed. In either case, this will lead to heightened violence and political shifts, as evidenced by the rise of Le Pen in France or Donald Trump in the US. Societies will need to balance the needs of their economy with social cohesion and grapple with profound questions about identity and nationhood.

**Optimal Racial Equilibrium:** The journey towards an immigration equilibrium will be marked by racial violence and political upheaval. Niall Ferguson has presciently pointed out that the consequences of the differential decline in the TFR are that the population of Africa will become a greater percentage of the global population, and the world will rapidly acquire a darker pigmentation<sup>xx</sup>. This will force a shift in global attitudes towards race, and while the end result is likely to be one of acceptance and equilibrium, the journey will be beset with hardships.

**Optimal Religious Equilibrium:** Similarly, higher fertility rates in Islamic countries will result in an increased proportion of Muslims globally. This will necessitate a new equilibrium in the long-simmering tensions between Islam and other major religions like Christianity and Hinduism. As religious demographics shift, so too will many countries' cultural and political landscapes. The world must navigate these changes carefully to avoid exacerbating existing tensions and promote peaceful coexistence.

**Optimal Marital Equilibrium:** In response to existential decline, future societies will be forced to adopt unconventional marital and societal structures. This is not implausible. Governments in Russia, Italy, and Japan have already offered tax incentives to promote childbirth. The journey from a passive, benign policy to Margaret Atwood's dystopia of "The Handmaid's Tale," where the primary function of fertile women is to bear children for the ruling class, can be short.

Case in point: It took only a decade or so of panic in China for the "wan, xi, shao" (the policy of late marriage, birth spacing, and limited fertility) of China in the 1970s to evolve into the brutal and murderous one-child policy in 1979<sup>xxi</sup>. It is not inconceivable that practices like polygamy or scenarios where women's bodies are commodified for reproduction could be introduced once the rate of population decline accelerates in the coming century.

#### IV.

Societies will face profound ethical dilemmas in searching for answers to the question of the optimal global population. Our collective history is filled with examples of the ease with which we can be manipulated to suppress the rights of entire sections of society in the face of threats, imagined or real. This time, when the demographic threat is truly existential for all humans, who will stop the frenzied masses from curtailing the freedoms of women who choose to work instead of having children? Or of women who choose not to have children at all? The loss of individual rights will not be uniform. As has been for thousands of years, the lash will fall the hardest on women.

Will our future selves retain the wisdom to resist such tyranny in the face of total social and economic upheaval? Will we begin to live out the visions of Margaret Atwood or even of the Japanese filmmaker Chie Hayakawa, in whose film the government pays seniors to euthanize themselves to reduce their economic toll on society<sup>xxii</sup>?

Ultimately, the optimal global population will emerge dynamically as the aggregate view that balances each constituent country's economic, environmental, social, religious, and ethical mores. While there is no way to know the end, we can only scaffold this search with a foundational view of the one inviolable truth: the inviolable concept of the individual's natural right to life, liberty, and property.

## NOTES

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<sup>v</sup> Finnis, J. (1998). *Aquinas: Moral, Political, and Legal Theory*. Oxford University Press.

<sup>vi</sup> Kunitz SJ. Diseases and the European Mortality Decline, 1700–1900. In: Kiple KF, ed. *The Cambridge World History of Human Disease*. Cambridge University Press; 1993:287-293.

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<sup>viii</sup> Max Roser (2020) - "Breaking out of the Malthusian trap: How pandemics allow us to understand why our ancestors were stuck in poverty" Published online at OurWorldInData.org. Retrieved from: <https://ourworldindata.org/breaking-the-malthusian-trap> [Online Resource]

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<sup>x</sup> Dean Spears, *New York Times*, *The World's Population May Peak in Your Lifetime. What Happens Next?* September 24<sup>th</sup>, 2023.

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<sup>xvi</sup> *The Economist*, December 4, 2003.

<sup>xvii</sup> Dean Spears, *New York Times*, *The World's Population May Peak in Your Lifetime. What Happens Next?* September 24<sup>th</sup>, 2023.

<sup>xviii</sup> Total fertility rate (TFR) is a demographic statistic and defined as the total number of children that would be born to each woman if she were to live to the end of her childbearing years and give birth to children in alignment with the prevailing age-specific fertility rates. It is calculated by totaling the age-specific fertility rates as defined over five-year intervals. Assuming no net migration and unchanged mortality, a total fertility rate of 2.1 children per woman ensures a broadly stable population. Source: OCED Data (<https://www.oecd.org/en/data/indicators/fertility-rates.html>)

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<sup>xx</sup> Ferguson, Niall, *Global Population Crash Isn't Sci-Fi Anymore*, March 10, 2024

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