

The future of migration, human populations, and global health in the Anthropocene



In *The Lancet*, Christopher Murray and colleagues¹ report forecasts of the global population in 2100 that are lower than previous estimates.² The authors projected the global population to peak in 2064 at 9.73 billion (95% uncertainty interval 8.84–10.9) people and decline to 8.79 billion (6.83–11.8) in 2100. The overall population growth and subsequent decline are based upon estimates of a lowering total fertility rate (TFR), which are driven largely by increasing female educational attainment and access to contraception. Meanwhile, migration is forecasted to determine the distribution of human populations by country. The authors are rightly cautious about predicting the impact of migration on population trends because of the paucity of good-quality data, a concern outlined in the 2018 report of the UCL-*Lancet* Commission on migration and health.³ Additionally, causes of forced displacement such as wars, natural disasters, and climate change, which are likely to worsen with time, are even less predictable because of the interaction between these factors and lack of existing data on their combined effects on population movement. Nevertheless, this new analysis¹ has improved on previous attempts by using time-series models with sociodemographic, conflict, natural disasters, and growth data as covariates to better inform the impact of migration on projections.

A key finding of Murray and colleagues that warrants further consideration is the projected decrease in the working-age population for several countries such as Spain and Japan. The consequent human capital shortage and probable concurrent burgeoning of the older population might lead to declining life expectancy and quality of life and worsening inequality. To address the potential catastrophic impact of a shrinking working-age population, countries have several options. First, countries could consider incentives to increase TFR before a population decline. To date, attempts to reverse decreases in fertility rates achieved through huge gains in female education and access to contraception have not worked, with pronatalist policies often having limited and temporary effects.⁴ Second, countries could consider the explosion of new technologies, including

artificial intelligence and robotics, as a path towards self-sufficiency in the context of declining human capital. Automation, such as in car manufacturing, shows that further robotisation of parts of the economy is inevitable and arguing against this is Malthusian. However, the promise of artificial intelligence and robotics providing the social, economic, and psychological underpinning for human societies in the face of a collapse of the working-age population is largely speculative. Available evidence suggests that these changes would have a disproportionate impact on lower paid workers.⁵ Third, to maintain cohesion, countries might choose to establish long-term bilateral strategic links with culturally similar nations. However, this choice is unlikely to be a viable option given the geographical distribution of countries that would need immigration and those with increasing working-age populations: sub-Saharan Africa and north Africa and the Middle East were the only super-regions forecasted to have higher populations in 2100 than in 2017. The current populist narrative of the value of ethnic cohesion to justify migration curbs will be challenged by deteriorating living standards. Fourth, wealthy countries such as the UK and the USA could counteract the impact of these changes through net migration of working-age adults from the countries with growing populations. Unfortunately, the election of nationalist rulers, associated decline in multilateralism,

Published Online
July 14, 2020
[https://doi.org/10.1016/S0140-6736\(20\)31523-3](https://doi.org/10.1016/S0140-6736(20)31523-3)
See Online/Comment
[https://doi.org/10.1016/S0140-6736\(20\)31522-1](https://doi.org/10.1016/S0140-6736(20)31522-1)
See Online/Articles
[https://doi.org/10.1016/S0140-6736\(20\)30677-2](https://doi.org/10.1016/S0140-6736(20)30677-2)



Tom Pilsner/Panos pictures

and increasing hostility to migration makes this option unlikely in the short term.

Migration can be a potential solution to the predicted shortage of working-age populations. While demographers continue to debate the long-term implications of migration as a remedy for declining TFR, for it to be successful, we need a fundamental rethink of global politics. Greater multilateralism and a new global leadership should enable both migrant-sending and migrant-receiving countries to benefit, while protecting the rights of individuals. Nations would need to cooperate at levels that have eluded us to date to strategically support and fund the development of excess skilled human capital in countries that are a source of migrants. An equitable change in global migration policy will need the voice of rich and poor countries. The projected changes in the sizes of national economies¹ and the consequent change in military power might force these discussions. Similar to the rise of China's economy and military power over the past three decades, India, Nigeria, and Indonesia might become major global actors. Furthermore, global cooperation has to address the causes of conflict and environmental crises that will challenge any attempt at making migration work for human health and prosperity. Loss of life directly through wars, and indirectly through the contraction of economies, will hamper attempts at global workforce sharing. Additionally, the population-carrying capacity of some countries that are projected to have increasing working-age populations might be limited by anthropogenic climate change and natural disasters.

Ultimately, if Murray and colleagues' predictions are even half accurate, migration will become a necessity for all nations and not an option. The positive impacts of

migration on health and economies are known globally.³ The choice that we face is whether we improve health and wealth by allowing planned population movement or if we end up with an underclass of imported labour and unstable societies. The Anthropocene has created many challenges such as climate change and greater global migration.⁶ The distribution of working-age populations will be crucial to whether humanity prospers or withers. The global collaboration of Lancet Migration⁷ has identified migration, climate change, and universal access to health as key challenges and is well placed to generate evidence to support global health policy.

I was chair of the UCL-Lancet Commission on migration and health, and I am currently co-chair of Lancet Migration. I report research funding from the UK Medical Research Council, UK National Institute for Health Research, Bill & Melinda Gates Foundation, and the European Commission. The views expressed in this Comment are mine.

Copyright © 2020 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

Ibrahim Abubakar
i.abubakar@ucl.ac.uk

UCL Institute for Global Health, London WC1N 1EH, UK

- 1 Vollset, SE, Goren E, Yuan C-W, et al. Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the Global Burden of Disease Study. *Lancet* 2020; published online July 14. [https://doi.org/10.1016/S0140-6736\(20\)30677-2](https://doi.org/10.1016/S0140-6736(20)30677-2).
- 2 UN Department of Economic and Social Affairs. World population prospects 2019. 2019. <https://population.un.org/wpp/Publications/> (accessed July 1, 2020).
- 3 Abubakar I, Aldridge RW, Devakumar D, et al. The UCL-Lancet Commission on migration and health: the health of a world on the move. *Lancet* 2018; **392**: 2606–54.
- 4 Takayama N, Werding M. Front matter. In: *Fertility and public policy*. Cambridge, MA: MIT Press, 2011: i–iv.
- 5 The Royal Society and British Academy. The impact of artificial intelligence on work. 2018. <https://royalsociety.org/-/media/policy/projects/ai-and-work/evidence-synthesis-the-impact-of-AI-on-work.PDF> (accessed July 1, 2020).
- 6 The Lancet. Climate migration requires a global response. *Lancet* 2020; **395**: 839.
- 7 Orcutt M, Spiegel P, Kumar B, Abubakar I, Clark J, Horton R. Lancet Migration: global collaboration to advance migration health. *Lancet* 2020; **395**: 317–19.