

# Implications of Changing Global Population Sizes & Aging on National Security



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## Introduction

Changes to national populations unfold slowly, across decades and usually across numerous transitions of political power. These changes are thus often given little explicit attention in favor of seemingly more pressing issues. In the 21st century, however, the shifting global population landscape has attracted renewed attention for its likely impact on global security and sustainable economic development, including in relation to the growing focus on global climate solutions. The United Nations Population Division projects that the total global population will peak near the end of the century at just under 11 billion, but other credible studies predict a peak around 2070 under 10 billion, with the century ending at around 9 billion. Thus, there are projected to be between 1 and 3 billion more people by the end of the century than in the 2020s and around the same range expected as soon as 2050 as well.

There is substantial regional variation in changes in the global population projected for the 21st century. While the 20th century was one of huge growth in the world population that saw a rise in almost every country – increasing nearly 400% worldwide over those 100 years – the 21st century will see many countries shrink in population size while others will continue to grow. The average age of a citizen of the world also will rise significantly, though again there is projected to be a big variation across states that will see some continue to have their largest population group be children, while others see the aged 65+ population exceed that of children. The emergence of “super-aged” states – where 20% of the population is aged 65+ – became a new milestone in human development only in the early 21st century. Japan was the first such state. This differential growth will pose new challenges to maintaining peaceful relations among states and facilitating sustainable economic development.

Japan is one of dozens of countries experiencing rapid aging and population shrinkage while elsewhere in the world and in Asia some countries continue to see rapid population growth and youth age bulges. The new, 21st-century wave of demographic change seen in the rapid aging of the Northeast Asian countries and in the population growth of numerous middle-power states in the Indo-Pacific resembles the differential growth seen in other regions of the world. However, some of the lessons drawn from the global experience with population change are not as relevant to Indo-Pacific concerns and demographic realities.

Previous studies that examined “the graying of the great powers”

predicted many challenges to global security, affecting not just military manpower and budgets but ideology, political stability, technological innovation and economic growth. A report by the US-based Center for Strategic and International Studies by Richard Jackson and Neil Howe in 2008 is one widely cited example. As the world enters its third decade of rapidly aging states, however, there is a growing diversity as well as growing number of aging states: a first wave of rapidly aging states were nearly all highly developed democracies whereas the second wave includes several less-developed states as well as non-democracies like China and Russia. Thailand is part of this second wave in Southeast Asia as well as Australia and New Zealand. Later, a third wave of aging is projected to result in additional states in the Indo-Pacific becoming super-aged by 2050, including Vietnam, while even still comparatively youthful states will see a rapid rise in the proportion of their populations aged 65+. For example, the aged 65+ percentage will double in the Philippines though still not even reach 12% of their total population. Thus, even comparatively youthful states will be affected by the global phenomenon of rapid aging, whether directly or through their relations with rapidly aging states.

## Differential Changes in Population Demographics Globally

Demographic change is a worldwide phenomenon with global implications. Many states outside of the Indo-Pacific also face rapid aging and decreasing total population sizes, primarily in Europe. According to statistics from the United Nations Population Division, of the eight states with populations over 10 million that experienced population shrinkage in the 2010s, six were in Europe – in addition to Syria and Japan. By contrast, in Africa and the Mid-East, major security concerns stem from quickly *growing* populations and youth bulges. Reversing a major trend of the 20th century, where populations ballooned around the globe, only Asia and Africa are projected to see substantial population growth in the rest of the 21st century and even that growth will be seen in only parts of each of those regions. By one projection, 98% of population growth in the 21st century will be in less-developed countries. This statistic is drawn from Jennifer D. Sciubba’s excellent overview of worldwide demographic trends, *8 Billion and Counting* (W.W. Norton, 2022).

As a result of the projected differential population growth among regions in the 21st century, a rising number of the top 10 most-populous countries in the world will be in Africa by 2050: Russia and

Mexico will no longer be in the top 10, replaced by the Democratic Republic of Congo and Ethiopia. Within Asia, China and India reversed roles as the world's largest-population country in 2022. The United States is projected to drop to the world's fourth-largest-population country in 2051, with Nigeria rising to number three – a country that in 2023 was just two-thirds the population size of the US, illustrating the fast growth trajectory Nigeria is on.

Rising median ages and increasing parity between the size of working-age and elderly populations can be seen on every continent, including in numerous middle-income and lower-income countries, but is especially concentrated at the higher-income end of the spectrum. It was only in 2000 that any country had ever reached a median age above 40: Japan at 41.2. By contrast, the majority of the world's people live in poor countries with comparatively young populations.

Continued declines in fertility and growing concerns over the long-term effect of the most-recent and future pandemics as well as the likely effects of climate change are the primary reasons for the variance in global population projections. According to one study, some 23 countries could see their current populations reduced by half by the end of the century, including Japan, Thailand, Italy and Spain. One noted book, *Empty Planet*, argues that population growth may slow even more quickly, peaking at around 9 billion between 2040 and 2060, based on trends in the 2010s toward much lower fertility worldwide than projected for mid-century in most other studies.

The Indo-Pacific region also is projected to experience differential population growth and aging this century. As one example, by 2050, India is projected to add more to its population than the combined equivalent of the Japanese, Korean, and Taiwanese *total* populations – despite India's declining birthrate. As another example, China – also still a developing country in terms of per capita GDP – is projected to join the ranks of the super-aged in 2033 and began to experience total population shrinkage in 2022. In short, demographic change projected for the Indo-Pacific region in this century mirrors the global trend of differential growth – but it also differs from the global situation in that there are few remaining fast-growing populations in the Indo-Pacific region, though large-population states such as India, Indonesia, Bangladesh, and the Philippines all are projected to grow through 2050 and beyond, and some very small-population states are growing even more quickly. The concentration of rapidly aging states in Northeast Asia also mirrors a similar concentration in Europe, another region containing largely economically developed states.

### Contrasting 20th & 21st Century Demographic Change

The incredible population growth of the 20th century was one of that century's defining hallmarks. It took all of human history to reach the then-high mark of an estimated 1.6 billion people on the planet in 1900 but only 100 years to add 4.6 billion more by the end of the 20th century. Population growth was widely reported and often a topic of concern throughout the 20th century, particularly

fears of dwindling resources and conflict that could result from unchecked population growth. By contrast, the decline in fertility rates – especially in developed countries – became another major demographic story in the later decades of the 20th century. Combined with longer life-expectancies, declining fertility resulted in rapidly aging populations such as Japan's.

The latest stage of global demographic transition is when fertility rates are so low that total population sizes begin to shrink, combined with even faster aging of the total population due to longer life expectancies. This new stage is projected to result in a large rise in the number of super-aged societies by the mid-21st century, including all of the Northeast Asian region apart from Mongolia as well as some territories in the southern Indo-Pacific region. Rapid aging also is projected to lead to a large number of states around the world experiencing total population shrinkage. According to projections from the United Nations in 2022, between 2022 and 2050, the populations of 61 countries or areas are expected to decrease by 1% or more.

### Population Size & National Security Historically Versus Presently

The size of a country's population has historically been seen as a source of national power, but the reality has been more nuanced, with the linkage even less clear in the 21st century. Population size, in particular a large number of younger men historically, can contribute to state power through large armies as well as enhanced economic production. And yet, history shows that a large and growing population also can be a burden and that expanding populations can create conflict through territorial aspirations and competition over limited resources. Among great powers, however, lived experience has suggested that more people is better and fewer worse. This experience sets the stage for concern about rapid aging and shrinking populations currently underway within most of the major powers in the world today.

However, when one considers the security environment in the Indo-Pacific presently, it is not the states with growing populations that are generating the most concern. Rather, primary security concerns – at least of the US and its allies and partners – generally focus on rapidly aging states like China, Russia, and North Korea. How is it that states with projected shrinking populations could become major security concerns? The reasons are varied, with some having nothing to do with their population demographics. In relation to population size, though, determining national power is not as simple as counting the number of residents, workers, or soldiers.

Numerous studies that examine the relationship between population size and national security advance a three-pronged model that starts with population size but add *productivity* and *political capacity* as important factors affecting the value of population size. In addition, it has been noted that population size can be supplemented by alliances, foreign legions and mercenaries, and through immigration. Better utilizing the existing population is yet another way to affect “size” – such as better utilization of older workers, women, and marginalized populations.

These insights have great relevance for Japan and other states of “aging Asia”. As one example, numerous militaries of aging states are widening their pool of potential recruits by expanding the acceptable age range, considering dual nationals, and making greater efforts to attract and retain females. Another example is seen by numerous of America’s aging allies deepening alliances and partnerships with other like-minded states, which is likely driven by a range of factors with shrinking working-age populations being one.

Thus, in both areas of population advantage subscribed to for centuries – military manpower and economic production – there is not a perfect correlation between population size and capabilities. The contrast between the economic size and military might of Taiwan during the early Cold War period (despite its small population size) versus population Goliath China at that time offers one such example: Taiwan’s economy was much larger and military more capable, despite a population less than one-fiftieth the size. Japan in the 1980s is another example, with its population producing a total economic output larger than the rest of East Asia combined, despite far less than one-10th the total population size.

In the Indo-Pacific region today, innovations in productivity – in both the military and non-military realms – and political entrepreneurship both are widely apparent in how Asia’s aging powers have sought to adjust to rapid aging and shrinking of their working-age populations. As one example, the very idea of a “working-age population” itself should be understood as a cultural construct. OECD data show a wide variation of both government-encouraged retirement ages as well as the actual average retirement ages chosen by individuals in OECD countries. South Korea, Japan, and the US all have longer effective working lives than “normal retirement” set by government policy; in many European countries it is the opposite: many workers retire *before* normal retirement age. This variation is not due to significant differences in life expectancy across these states but rather is the result of cultural preferences and norms as well as variation in income distribution.

### Rapid Aging & National Security: Uncharted Territory

The linkage between rapidly aging or older populations and national security is less clear, in part because it is historically unprecedented. Past scholarship has demonstrated that states with large youth populations are often more conflict prone, with the corollary then that states with older populations would be less so – but there has not yet been enough experience with rapidly-aging and super-aged states to predict their security behavior.

Late-stage rapid aging results in shrinking working-age populations and a shifting balance of political power among age groups and/or generational cohorts. What are the effects of these shifts is a different matter. Cross-nationally, my research on Northeast Asian states has found that elderly populations do not express attitudes about military security that consistently differ from younger age groups: in some states elderly respondents express more supportive views toward national defense, in other states less, and in yet others there is no significant difference apparent among

age groups.

On other predicted effects of late-stage rapid aging on military security, numerous existing studies argue that this demographic transition will lead to changed perceptions of aging states by other states, which could alter relational security dynamics as a result. Rapid aging also could lead to changing views of military strategy and the importance of military readiness among rapidly aging populations. Thus, the hypothesized effects of rapid aging on military security are both about domestic attitudes and decisions in addition to being relational among states within a shared security ecosystem. My research that examines relational change in the Indo-Pacific region finds that aging powers are not necessarily viewed and treated as weaker, more vulnerable powers. Moreover, older citizens of aging powers are not, as a group, prioritizing their personal security – *i.e.*, health or retirement contributions – over national security.

In addition to these first-order hypothesized effects of rapid aging on military security advanced in existing scholarly literature, numerous second-order effects also are commonly argued to result from rapid aging. Of these second-order predicted effects, only one – a smaller recruiting pool for militaries – is a virtual certainty (unless there is a cultural change that results in gender parity in military service). The others predicted generally have not materialized as expected. For example, a smaller recruiting pool for militaries will not necessarily result in a smaller military: states might expand the pool of eligible recruits to address the shortfall or increase incentives to retain troops for a longer period.

Another prediction for rapidly aging states, decreased defense spending, will not necessarily result from the prediction of less government revenue or changing views of the importance of military readiness; indeed, less government revenue itself is not seen in all of the states that have experienced rapid aging to date: some rapidly aging states continue to generate robust economic growth and rising government revenues. My research has shown that all six of the rapidly aging states of Northeast Asia have *increased* their defense spending as they began to experience rapid aging. This pattern is probably not due to the aging itself – it is not that aging states are likely to spend more on defense – but rather to other factors. That said, another finding from my research is that a shared component of increased defense spending across aging states is significant investments in new, labor-saving technologies to help to offset the effect of a smaller number of military personnel – so aging does have some effect on the nature of the spending.

### The Technological Dimension of Predicted Population Change

New technologies such as robotics and other unmanned systems, including artificial intelligence (AI), surely will help to mitigate the negative effects of shrinking working-age populations in rapidly aging states for economic production broadly and military security specifically. However, at the same time, such new technologies themselves are also altering the nature of the regional – and global – security landscape, including leading to the creation of new security

domains in cyberspace and outer space as well as new dimensions of traditional security domains. Responding to the new threat aspects of these technologies will require a large number of personnel, even if in other ways these new technologies offer labor-saving possibilities.

New military technologies that are designed more explicitly to involve fewer human beings also can result in new military concerns that then generate an increased need for human labor responses. Though there may perhaps be a net savings of labor overall, or at least an increased flexibility of the type and location of that labor, the reduction in necessary personnel due to the use of new technologies is likely far less than it may appear on the surface – at least in the short-to-medium term. One example of such apparently labor-saving technology is “uncrewed” aerial drones, many of which are piloted by human beings remotely and so still involve the use of human labor. A second-order example would be to consider smaller aerial “swarm” drones that are envisioned in the future to be controlled largely by AI. On the surface, this technological development and its implementation reduces the need for human pilots, but at a deeper level this sort of new weapons system introduces an entirely new type of military threat for which human labor must develop and deploy solutions – and pay for.

Finally, in considering how evolving military and civilian technologies may offset or exacerbate demographic challenges of rapidly aging states, other technologies also are being introduced into conflict scenarios that do not have an obvious connection to demographics nor to new security domains but nevertheless are forcing military strategists to adapt their planning for future conflict. This latter category of important technological change affecting military security planning would include improvements in missile technology (both hypersonic and conventional), proliferation of nuclear weapons (though there is potentially a demographic aspect to explore there), and the spread of the most advanced weapons platforms to more countries. Thus, all states are facing a host of new security challenges this century – whether aging or more youthful, shrinking or growing in population size. Each state’s demographic profile will affect in numerous ways how it responds to these new challenges, however.

In sum, four broad points about the potential mitigating influence of technology on the coming demographic changes ahead, especially for the world’s aging powers, should be considered. First, there are a surprising number of non-high-tech potential solutions to shrinking workforces and aging that also could be employed by military forces – such as outsourcing and enhancing efficiencies using existing technologies. Second, different sorts of threats utilize technology differently: there is no universal answer to whether technology can offset the need for military personnel in conflict in the abstract. For example, invading and occupying a country requires different technology than protecting against an invasion. Third, there often still is a need for people to operate many uncrewed systems, and to design, build, and pay for them. Fourth, the rise of new types of conflict and other new military concerns is shifting the nature of warfare in ways that affect the type of human labor required for military security.

## Implications for Government Policy & Our Shared Climate

In numerous aspects of day-to-day policy planning by governments worldwide, demographic change is playing a growing role – even if it is not always framed in this way. For example, the population aging and shrinking of Northeast Asia’s aging powers has accelerated development and adoption of a host of new military technologies and also contributes to increased pursuit of both security and economic partnerships with other states in the Indo-Pacific region and beyond, often boosting the economic growth and development of critical infrastructure in those states. Government leaders in population-growing states face mounting political pressures to address inadequate infrastructure in cities experiencing significant rural-to-urban migration and population increases overall. Investments in those places by aging and population-shrinking states can help to address those needs.

Looking ahead, the effects of climate change may be exacerbated by projected growing populations as well as intensified resource use due to industrialization and economic growth on our shared planet. India’s growing use of coal to power electrification of developing areas is one example. The destruction of rain forests around the globe to facilitate economic development is another. Jennifer Sciubba emphasizes this linkage in her global study of challenges of a world population reaching 8 billion in 2022, observing: “Continued population growth and rising incomes will mean continued rises in greenhouse gas emissions barring radical change with clear leadership from the US and China, in particular.”

Even though global population growth may end around mid-century – only a few decades from now – concerns about potentially rising consumption patterns of both the current world population as well as the next several billion inhabitants of the planet threaten the limited progress to date in meeting global emission-reduction targets. More directly in relation to global security challenges, consumption patterns of the growing number of inhabitants in the Indo-Pacific lead to fears about potentially rising interstate violence as a result of a growing competition for resources and/or growing instability due to lack of sufficient resources or consequences of climate change – which, at an extreme, could lead to state failure.

In summary, the differential demographic changes expected in the 21st century have led to new challenges and an entering into uncharted territory in human development. Careful attention to the new dynamics posed by changing demographic patterns should be central to solutions envisioned by governments and citizen leaders.

Further reading: Andrew L. Oros, “The Rising Security Challenge of East Asia’s ‘Dual Graying’: Implications for U.S.-led Security Architecture in the Indo-Pacific”, *Asia Policy* (April 2023): 75-100.

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