South Korea's Demographic Advantage is Over: The Regional Context and the Economic and Security Implications

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ABSTRACT

South Korea has the lowest birth rate in the world, its population—especially its working-age population—has declined, and the pronatalist policies of the past 20 years have not been successful at reversing this trend. Over time, this threatens the country’s economic and fiscal position, as well as its military position as the number of conscripts declines. While more advanced technology can help, over the long term it is no substitute for people, especially in the security realm. Overcoming this will require Korea to either shift to a new economic paradigm or else achieve a second Miracle on the Han River—this time demographic rather than economic.
This February, Statistics Korea reported that, for the second year in a row, South Korea had the lowest fertility rate in the world in 2020: 0.84, well below the 2.1 population replacement rate. Moreover, South Korea’s working-age population peaked in 2017, signaling an end to its demographic advantage. These forces have culminated in a decline in South Korea’s total population over the past two years, a decade after Japan’s population peaked in 2010. In the case of South Korea, more than a decade of government pronatalist policies have sought to reverse these trends, but to no avail.

The case of Japan provides perspective on how South Korea’s demographic future will likely unfold. Japan’s shrinking labor force and increasing social welfare burdens of a rapidly aging population have undermined its economic growth potential. China will also encounter intensifying demographic pressures. The economic and military consequences do not necessarily go hand-in-hand and have not yet forced tough policy tradeoffs.

However, over the long run, demographic changes will likely constrain the ability of Seoul, Tokyo, and Beijing to provide for their aged populations while maintaining other pressing government policy objectives, such as environmental goals or defense needs. The latter is existential for South Korea, which faces threats ranging from an implacably hostile North Korean neighbor on the peninsula to rising geopolitical tensions in the Northeast Asian region. For now, managing these risks is affordable. But over time, South Korea will have to make tough policy and fiscal choices, unless it can achieve another “Miracle on the Han”—this time overcoming its demographic challenge.

**South Korea’s Dramatic Decline in Fertility Rates**

The reasons for the dramatic decline in South Korea’s birth rates during the past few years include postponed family formation and child-bearing, plus a decrease in desired family sizes. This is true for South Korea as well as other advanced economies. South Korea’s fertility rate—the number of children per woman in her childbearing years—has not been above the replacement rate of 2.1 since 1982. Since then, the number has inexorably declined. The graph below shows the downward trend between 1998, when President Kim Dae-jung established the Ministry of Gender Equality and Family (여성가족부) and 2019, when the rate had fallen to 0.92 (see Exhibit 1). Statistics Korea has since reported that the estimate for 2020 is even lower, at 0.84, the lowest in the world for the second consecutive year.

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3 The first “Miracle on the Han” referring to its rapid, and unexpected, growth from an impoverished country after the Korean War to top 15 global economy, technological innovator, and OECD member by the 1990s.
Demographic pressures on South Korea have arrived earlier than expected. Statistics Korea’s low population growth scenario,\(^5\) not the baseline scenario, is playing out. Instead of the population peaking in 2028, the population actually shrank by about 20,000 people. South Korea\(^6\) is following Japan’s\(^7\) path since its fertility rate dropped below the replacement level in 1983. Japan’s population peaked in 2010 at 128 million, 37 years after its fertility rate had fallen below 2.1, in 1973 (see Exhibit 2).\(^8\)

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Meanwhile, China experienced its lowest birth rate since 1961 last year. Beijing recently began allowing families to have three children, but demography expert He Yafu doesn’t expect this to lead to a fertility boost because it fails to address the structural reasons that people have become reluctant to have multiple children. China’s population will likely age before the country can escape the middle income trap, introducing a profound domestic challenge that might prompt the ruling Communist Party to turn inward.

**Economic Headwinds Will Intensify Over Time**

Moreover, South Korea’s working age population (ages 15-64) peaked in May 2017 and has steadily declined through March 2021. A rising working age population bestows a very powerful demographic advantage. Losing this asset will have far-reaching economic, fiscal, and national security consequences for the country.

The economic effects of a declining and aging population are manifested in several ways. For one, a country no longer enjoys the powerful advantage that a rising working age population provides.
population provides. (The two fundamental inputs to economic growth are labor and capital.) High employment also supplies a deep pool of stable, domestic savings that can finance investment. As a result, the economic implications of a low birth rate on economic growth, government expenditure, and debt are manageable over the near future but will grow in relevance over the next two to three decades.

An aging society also increases the burden on those in the workforce to pay for retirees’ social welfare net and taxes public fiscal resources.13 A helpful metric to track this dynamic is the old age dependency ratio, the number of people over age 65 per 100 working people. South Korea’s old-age dependency ratio was previously relatively low, below 10 during the high growth years of the 1970s and 1980s. By 2020, it had risen to 23.6.14 By 2050 South Korea will have come close to catching up to Japan’s ratio,15 which is currently the highest in the world at 52.0, and remain higher than China’s—despite that country’s mounting demographic pressures, according to a United Nations projection (see Exhibit 3).16 If misery loves company, solace is provided by the OECD’s projection that its members’ average old-age dependency ratio will almost double by 2050 to 53.2.17

15 “Republic of Korea - Ratio of population aged 65+ per 100 population 20-64 years: Comparison of Korea, China, Japan, and Italy.” Knoema, https://knoema.com/atlas/Republic-of-Korea/topics/Demographics/Dependency-Ratios/Old-age-dependency-ratio-65-per-20-64?compareTo=CN,JP,IT,KR.
17 Ibid.
The inflection point that marked the end of China’s WTO-era turbo-charged economic growth was not just the Global Financial Crisis in 2008-2009 but also the coinciding sharp fall in the proportion of its working age population. China’s rise as a great power will face increasingly strong headwinds from its mounting demographic pressures. Its working age population (between 18-65 years old) is currently shrinking. And the United Nations projects that by 2050, the percentage of working age people in China will have steadily declined to be smaller than that of the US—to under 60%, from a peak of roughly 75% around 2010. As the hackneyed observation goes, China will get older before it gets wealthy enough to converge at advanced country per capita GDP levels.

For the time being, however, South Korea has ample fiscal headroom to face the future burden of government spending for an expanding old-age social safety net. Its total central and local government debt was a relatively low 48.7% of GDP in 2020. This is below the 68.9% for Germany (the gold standard for a AAA-rated sovereign government, in the authors’ opinion), and well below the 127.1% for the US and a whopping 256.2% for Japan, according to IMF statistics. This future debt-burden trajectory will hinge on potential GDP growth rates. The OECD projected in 2018 that from 2018-2030, South Korea’s GDP growth rate of 2.3% will continue to outperform not only Japan’s (1.4%) but also the OECD average (1.5%) on an

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18 Henry Olsen, "Opinion: China’s looming population slide could make it an even more dangerous global threat," The Washington Post, March 2, 2021, [https://www.washingtonpost.com/opinions/2021/03/05/chinas-looming-population-slide-could-make-it-an-even-more-dangerous-global-threat/](https://www.washingtonpost.com/opinions/2021/03/05/chinas-looming-population-slide-could-make-it-an-even-more-dangerous-global-threat/).


annual average per capita growth basis.\textsuperscript{21} From 2030 to 2060, however, South Korea’s growth rate will decelerate slightly below Japan’s and settle at the OECD average of 1.7\%—largely due to demographic pressures.

\textbf{Military Capabilities—Demography is Not Destiny, Yet}

Despite longstanding adverse demographics, Japan’s military prowess continues to grow, according to experts.\textsuperscript{22} But how are these adverse demographics trends playing out in Japan, and when will they matter for the country’s military? For one, the shrinking of the draft age cohort means fewer soldiers. Japan’s Self-Defense Force has failed to meet recruitment targets for the past six years.\textsuperscript{23} But concurrently, force modernization and the strong alliance relationship with the US has provided a buffer. Rather, the overriding constraints for Japan have been political—its longstanding 1\% of GDP cap on annual defense spending and the pacifist Article 9 in its constitution that limits its military posture to self-defense. Nonetheless, elastic interpretations of Article 9 have enabled Japan’s government to sustain investment in its military capabilities.

South Korea, like Japan, will also face military shortages. In November 2019, South Korean officials said that the size of its military would shrink from roughly 600,000 to 500,000 in 2022.\textsuperscript{24} Moreover, South Korea’s Defense Ministry announced that it would cut the army draft period to 18 months by December 2021.\textsuperscript{25} Already, the size of South Korea’s armed forces is far smaller than that of North Korea, and China (see Exhibit 4).

\begin{flushright}
\textsuperscript{24} Dasl Yoon and Timothy W. Martin. "South Korea Is Having Fewer Babies; Soon It Will Have Fewer Soldiers." \textit{The Wall Street Journal}, November 6, 2019, \url{https://www.wsj.com/articles/south-korea-is-having-fewer-babies-soon-it-will-have-fewer-soldiers-11573039652#:~:text=That%20is%20why%20Seoul%20officials%20current%20total%20of%20about%20600,13181110%2C000.%20text=But%20the%20pool%20of%20able%20to%20South%20Korea's%20Defense%20Ministry}.
\textsuperscript{25} “Mandatory Military Service Period to be Reduced to 18 Months by Next Year.” \textit{Yonhap News}, December 16, 2020, \url{https://en.yna.co.kr/view/AEN20201216007500325}.
\end{flushright}
Exhibit 4.

Active Military Personnel

Source: The International Institute for Strategic Studies, 2019

The erosion of South Korea’s relative population advantage over North Korea will likely have detrimental implications for the South’s military manpower. Without a major change, and if population measurements are accurate for North Korea, by the year 2100, the population of the two Koreas will approach convergence, with the South shrinking from over 51 million today to just 29.5 million and North Korea reducing from 25 million to 22.7 million, according to the United Nations. The CIA World Factbook estimates that North Korea has about 25 million people, but the state has not disclosed official figures in years. Although North Korea’s total fertility rate of 1.9 births per woman is higher than South Korea’s 1.09, it is shy of the replacement rate of 2.1.

The implications for North Korea are not just on its military, which heavily relies on military manpower for security, but also on its economy. The military is often deployed as cheap labor for state construction and industrial projects. Now, chronic labor shortages have prompted the state to reduce the mandatory military conscription term from 10 years to eight, according to South Korea’s intelligence service. In addition, since prospects for attaining party

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membership have decreased for veterans, this has reduced incentives for military enrollment and reportedly increased draft dodging.³⁰

Exhibit 5.

For South Korea, the work-arounds to downward demographic pressures are: 1) Increase spending and reliance on new military technologies, 2) Expand the pool of recruits, 3) Maintain a robust alliance with the US.

On the first point, force modernization has been a key driver of South Korean defense spending in recent years. Despite increasing demands for spending on social welfare, South Korea has maintained defense spending at a relatively high level. Its 2020 military spending relative to GDP (2.8%) was more than the other main US allies: the UK (2.2%), Germany (1.4%), and Japan (1%). The US spends 3.7%. Procurement projects drove an 8.5% in defense spending in 2020, such as the F-35 and the country has also invested in developing new indigenous capabilities including the KF-X jet fighter, the K-2 battle tank, and a next generation submarine.³¹ Nonetheless, “there are things military technology can do,” said Cheon Seong-whun, a former South Korean National Security Council official, “and things only people can do.”³²

³¹ “South Korea Seeks to Increase Defense Budget 5.5 Percent Next Year.” Yonhap News, September 1, 2020, https://en.yna.co.kr/view/AEN20200831008900325.
³² Yoon and Martin. "South Korea Is Having Fewer Babies; Soon It Will Have Fewer Soldiers."
On the second point, given that the fighting force is projected to be about half its current size in 20 years, some South Korean politicians have suggested expanding military service to include females as a way to compensate.\textsuperscript{33}

On the third point, the US-ROK alliance has proved resilient as well as robust. The relationship weathered the turbulence caused by the exceptionally protracted and contentious negotiations over the 11\textsuperscript{th} Special Measures Agreement, which stipulates the cost sharing burden for US forces stationed in South Korea. The Biden-Moon Summit on May 21 also reaffirmed the alliance and its shared values. The alliance can, to some extent, offset the demographic pressures from a shrinking pool of conscripts in the future. Not only do South Korea and the US’ strategic interests overlap, but both sides also share soft-power interests of democracy, human rights, and the rule of law.

Despite these significant changes, a shift in regional power due to the demographic changes is mitigated by intervening factors. The presence of nuclear weapons dampens regional power shifts otherwise caused by population changes, according to research by RAND.\textsuperscript{34} But a nuclear arms race in East Asia would pose a great risk to regional security. And the fact that all the region's countries are seeing trend lines move in the same direction means that it is hard to see a decisive advantage falling in anyone’s lap. However, all countries will seek policies that help counteract the negative security implications of a shrinking, aging population. America, poised to grow by over 100 million people by 2100 and planning to grow its defense commitment to the Indo-Pacific region, may seek to buffer its allies’ diminished capacity to put boots on the ground.

**The Inefficacy of Pronatalist Policies**

In 1998, then President Kim Dae-jung established what is now named the Ministry of Gender Equality and Family. The ministry aims to advance the social position of women, promote gender equality, and guarantee working parents’ maternal and paternal rights. With its Saeromaji Plan, formulated in 2006 and implemented in 2010, the government unveiled comprehensive, pronatalist incentives “to address the possible adverse effects of low fertility and population aging.”\textsuperscript{35}

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In December 2020 the Moon Jae-in administration’s Presidential Committee on Aging Society and Population Policy,\(^\text{36}\) double-downed on pronatalist perks,\(^\text{37}\) announcing a new, 196 trillion won (about $178 billion) five-year plan.\(^\text{38}\) This is a huge amount, approximately equal to 2% of GDP annually, and it includes monthly bonus payments to families with infants as well as incentives to encourage parental leave.

Why aren’t such pronatalist policies working? Since 2006, the South Korean government has spent KRW185 trillion won to encourage more childbirths.\(^\text{39}\) South Korea is not alone. Norway has tried “liberal” measures such as state-run day-care facilities for families, yet its fertility rate has halved since 2008 to a record low of 1.53 in 2020. And Singapore has offered baby bonuses and a stepped-up matching savings program for up to the fifth child in a household (as well as a government match-making app), yet the country’s fertility rate was only 1.1 in 2020.

Perhaps fiscal resources could be put to greater use by addressing the underlying economic reasons for small families and delayed child rearing. In South Korea, the high cost of education and housing for young people is the most significant economic impediment to family formation and population growth. Discontent among young voters about the affordability of housing became an issue in the elections in April, in which the conservative party candidate ended the progressive party’s hold on Seoul, a stunning reversal largely attributed to outrage over a land purchase scandal involving employees at the state-owned Korea Land and Housing Corporation.

Immigration could be another solution—one that faces considerable cultural impediments. South Korean politicians believe the public is not ready for South Korea to become a country of immigration, according to interviews conducted in 2018 and 2019.\(^\text{40}\) The foreign population in South Korea peaked at about 2.5 million in 2019. Foreign-born immigrants are primarily female “marriage migrants” and migrant laborers allowed in to temporarily fill jobs in agriculture, manufacturing, and construction.

The benefits of immigration are best seen in the US. Between 1950 and 2015, 50 million immigrants arrived on its shores—and airports—accounting for most of America’s population growth and half the world’s total population growth during this period, according to the demographer Nicholas Eberstadt.\(^\text{41}\) Without an influx of immigrants, it is difficult to imagine South Korea, or any advanced country, escaping the problems of population decline.

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\(^\text{36}\) “South Korea to expand child care subsidies to boost low birthrate.” \(\text{Yonhap News, December 15, 2020,}\) \url{https://en.yna.co.kr/view/AEN20201215001951320}.

\(^\text{37}\) “Five key tasks for creating a society in which all members care for one another and work together.” The Presidential Committee on Aging Society and Population Policy, \url{www.betterfuture.go.kr/eng/pcaspp/fertility.do}.

\(^\text{38}\) “South Korea to Boost Child Care Subsidies to Tackle Low Birth Rate.” \(\text{KBS World Radio, December 15, 2020,}\) \url{https://world.kbs.co.kr/service/news_view.htm?lang=e&Seq_Code=158293}.

\(^\text{39}\) “South Korea to expand child care subsidies to boost low birthrate.” \(\text{The Korea Herald, December 15, 2020,}\) \url{www.koreaherald.com/view.php?ud=20201215000624}.


Conclusion

Demographic trends are not South Korea’s friend over the very long run. For the near term, however, the constellation of economic, fiscal and security factors is strong enough to offset the country’s rising demographic pressures. Economically, South Korea will continue to outperform most of its OECD peers, and its public finances are sound, arguably as strong as Germany’s. South Korea’s defense capabilities are enhanced by its robust, and resilient, alliance with the US—the world’s most formidable military power.

In the upcoming decades demographic pressures will steadily erode South Korea’s economic strengths—the population will continue to shrink, social welfare spending will rise, economic growth will moderate and public debt will rise. Yet, South Korea’s long-term outlook may not be overly bleak, as the country’s economic performance converges with that of its aging OECD peers over the next several decades, but doesn’t collapse.

Nevertheless, South Korea will need to fashion a new economic paradigm that relies on investment rather than immigration to enhance human capital and international competitiveness as its labor force withers. Full participation in the evolving trade architecture in Asia would be a step in the right direction. Pro-foreign business policies and an attractive tax regime for foreign investment could help realize South Korea’s long-held aspirations for being a regional logistics, manufacturing, biotech, pharmaceutical and financial hub, like Singapore or Ireland. However, there is no version of ASEAN, let alone the EU, in Northeast Asia that would allow South Korean firms to operate in a large common market. If South Korea falters on transforming its economy into a highly competitive economic hub, or loses out to regional competitors, it will may very well need to achieve another Miracle on the Han—this time, a demographic one—to ensure prosperity for future generations.
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