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Research Report

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Factors Shaping the Future of China's Military

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About This Report

China is experiencing rapid demographic change as young people are making up an ever-smaller share of the population. At the same time, China is seeking to modernize the People's Liberation Army (PLA). These two topics, which are not new, generally have been considered separately to date. In this report, we seek to combine RAND's expertise in population and aging, military enlistment, and the PLA to improve understanding of China's military strategy and of the choices China will likely face in the near term. As a project initiated by the RAND National Defense Research Institute, this work has no formal sponsor; rather, it is intended to provide information to various offices within the U.S. Department of Defense and to serve as the basis for future work exploring these topics in more detail.

In this work, we merge analyses of China's population with an assessment of the PLA's near-term needs. We document recent changes in population by age group and compare China's demographic challenges with those of other countries. We consider additional factors that influence military eligibility, such as education and health, and compare China's youth population with that of the United States. We examine near-term population projections for both countries and consider how a variety of other relevant factors are likely to influence the PLA's ability to recruit and its ability to transform its military into a more modern force.

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RAND National Security Research Division

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For more information on the RAND Personnel, Readiness, and Health Program, see www.rand.org/nsrd/prh or contact the director (contact information is provided on the webpage).

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Summary

China is experiencing rapid demographic change as young people are making up an ever-smaller share of the population. At the same time, China is seeking to modernize the People's Liberation Army (PLA). These two topics generally have been considered separately to date.

In this report, we place China's current population dynamics in context to consider how demographic changes will affect the PLA and China's broader society and to improve understanding of China's military strategy in the near term. First, we discuss China's current and past fertility rates, comparing trends in China with those in other countries. Next, we document China's age distribution and compare it with that of the United States. We discuss other specific health- and education-related trends that will influence PLA recruiting, present information about China's past and its likely future economic growth rates, and analyze the implications for the PLA and the country as a whole. Finally, we discuss the PLA's aims and the ways in which demographic and other trends may influence its capacity to achieve its goals.

Our analysis reveals that China's demographic trends do not portend a crisis for the PLA. However, China's economic and social environment will likely limit the PLA's ability to build and develop the type of military that Chairman of the Central Military Commission Xi Jinping envisions. If the PLA cannot access the types of recruits it needs, it may be forced to rethink its goals and assumptions about modernization.

Key Findings

Our analysis resulted in the following findings:

- China's population is declining, which will cause problems for China but not necessarily for the PLA.
- Fertility patterns in China are similar to those observed in other countries. This suggests that revoking the one-child policy will continue to have a smaller effect on population size than the Chinese government may have assumed and that China's population will continue to shrink in the future.
- Despite this stark change, China's youth population will remain more than three times the size of the United States' youth population in the near term.
- China's fertility-rate drop, which began in the mid-1960s, was one driver behind the country's sustained, rapid economic growth (approximately 9 percent annually for about 30 years).
- Continued decreases in the fertility rate will create an increasingly older population.
- China's current challenges include how to sustain economic growth as the economy matures and the population ages.

- Although demographic patterns in China are similar to those seen in other countries, comparisons should be made with caution; China's immense size means that small within-country changes could have large global impacts.
- The PLA's primary demographic challenge—which includes cultural, social, and political components—will be whether it can build and develop the type of military that Xi envisions.
- China's future operational model requires access to talent that it has struggled to obtain, in part, because of the PLA's culture and role in society.
- China's economic and social environment will likely limit the PLA's ability to get the "right" people in its ranks, which may force the PLA to rethink its goals and assumptions about modernization, specifically whether it can adopt a Western or quasi-Western operational model.

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China's population is changing rapidly. Although the one-child policy has ended, China's birth rate continues to drop precipitously. At the same time, China seeks to modernize and professionalize the People's Liberation Army (PLA). In this work, we place China's current population dynamics in context to consider how demographic changes will affect the PLA and China's broader society. First, we discuss China's current and past fertility rates. We contextualize these rates by comparing trends in China with those in other countries and by considering China's past population growth. Next, we document China's age distribution—in the recent past, the present, and the near future—and compare it with that of the United States. We discuss other specific health- and education-related trends that will influence PLA recruiting, present information about China's past and its likely future economic growth rates, and analyze the implications for the PLA and the country as a whole. Finally, we discuss the PLA's aims and the ways in which demographic and other trends may influence its capacity to achieve its goals.

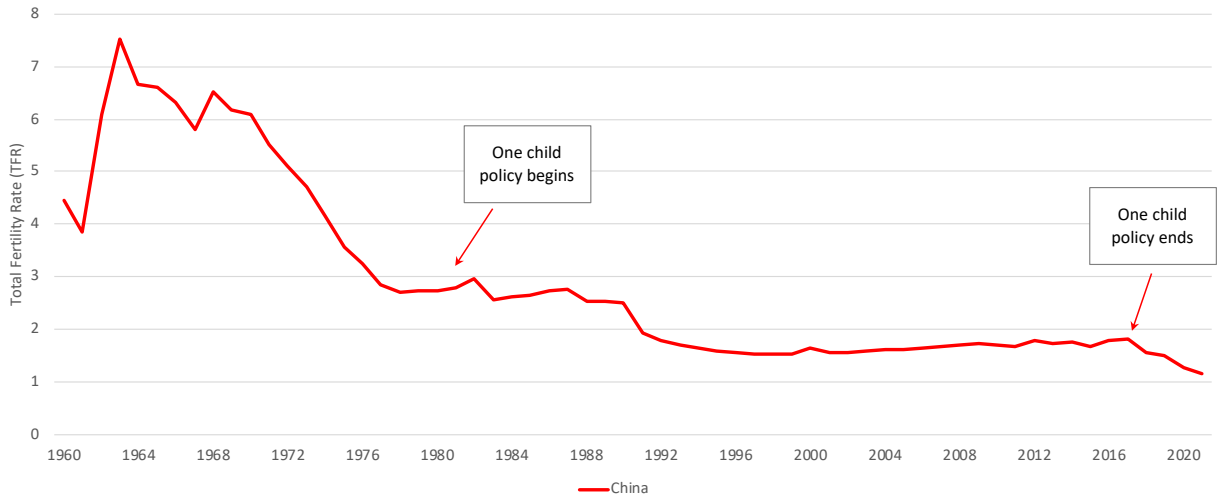
Demographics in Detail

Declining Fertility Rates

The size of the population and trends in population growth play a role in China's capacity to fill its military ranks. China's *birth rate*, or *total fertility rate* (TFR), which is the average number of births per woman, has fallen substantially in the past decade.[1] But this past decade is not the period in which China's fertility rate changed most dramatically. During the 1960s and 1970s, before the one-child policy was enacted, China's fertility rate began to fall quite sharply; after a period of relative stability during the 1990s and 2000s, China's fertility rate declined further. The one-child policy was formally ended in late 2015, although rules had been relaxed prior; China's fertility rate continued to decline during and after these changes (see Figure 1). This suggests that the one-child policy is far from the only driver behind China's fertility rate patterns.

[1] As defined by the World Bank Group (undated-c), the "total fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year."

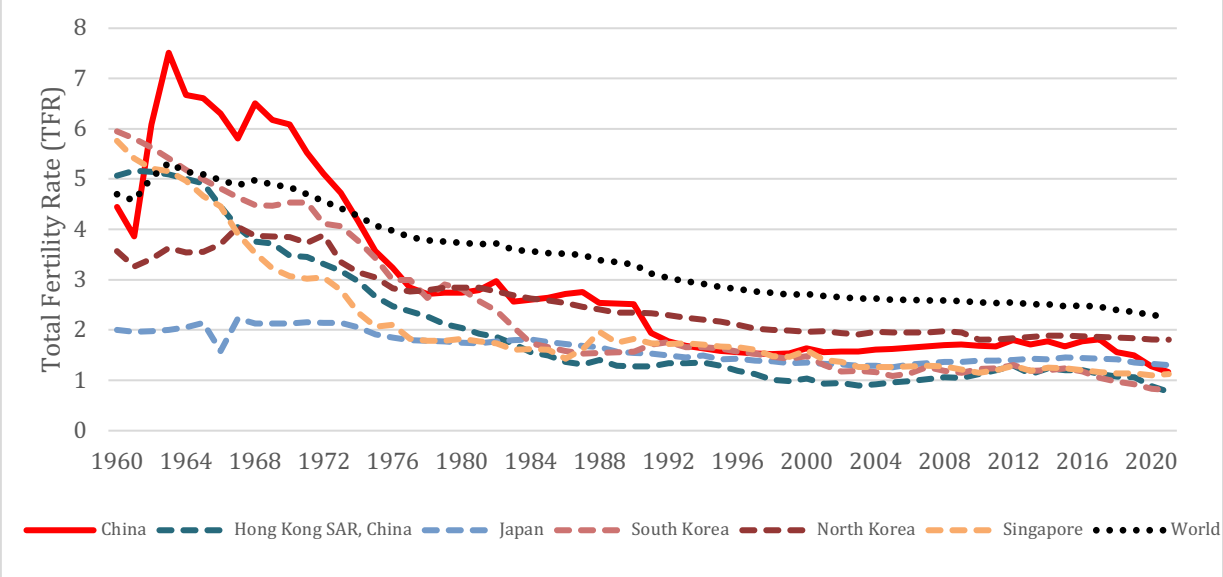
Figure 1. China's Fertility Rate, 1960–2020



SOURCES: Adapted from World Bank Group, undated-b. Features data from Eurostat; United Nations Population Division, 2022; and statistical databases and publications from national statistical offices.

Such stark patterns are not unique to China; fertility rates have fallen across much of the world in a somewhat similar manner. Figure 2 compares China's fertility rate with those of several other countries in Asia and with the global average fertility rate. While the general pattern is similar across these countries, China's pattern of change is more abrupt; this is because China's fertility rate in the mid-1960s was higher than the rates in the other countries shown. But even though the other Asian countries included in Figure 2 made fewer attempts than China to control fertility rates, the fertility rate in each of these countries has been below the world fertility rate since the mid-1970s. The reason for the differences between China and other countries, as discussed below, is that China appears to have lagged behind other Asian countries in hitting key development points that influence population patterns. Although the one-child policy had an impact on the fertility rate, it was not responsible for the initial and far more substantial decline that occurred prior to the enactment of that policy, and it is not directly or solely responsible for the continuing decrease since the policy was removed. In short, fertility rates have fallen and have become more similar across Asian countries since the mid-20th century. Similar fertility patterns have occurred in such disparate countries as Russia, India, and the United States. The most notable exception to the fertility patterns evident in many countries is found in sub-Saharan Africa, where birth rates remain relatively high even after a notable fall in fertility rates (World Bank Group, undated-b).

Figure 2. Fertility Patterns Across China, Other Countries in Asia, and the World, 1960–2020



SOURCES: Adapted from World Bank Group, undated-b. Features data from Eurostat; United Nations Population Division, 2022; and statistical databases and publications from national statistical offices.
NOTE: SAR = special administrative region.

Total Fertility Rate

Today, fertility rates across the world are generally below the replacement rate (typically considered to be around 2.1).[2] The lowest TFRs are in South Korea (TFR of 0.8), Hong Kong (TFR of 0.7), and Puerto Rico (TFR of 0.9). Also among the 15 countries with the lowest TFRs are Macau, Singapore, Malta, Ukraine, Spain, Italy, and China. China's TFR is 1.2, and the United States' TFR is 1.7.[3]

Patterns in development and societal factors provide some explanation for these trends. According to Sciubba (2022, p. 66), "post-industrial societies that encourage women to work outside the home while also painting them as natural caregivers have lower fertility because they impose conflicting narratives on women."[4] More broadly, when women have access to family planning, education, and occupational opportunities, birth rates tend to fall to well below replacement rates (Sciubba, 2022).[5] These trends hold in different countries and in different regions throughout the world, including Italy

[2] A TFR of around 2.1 is necessary to maintain a stable population (net of immigration). At rates below 2.1, the population generally decreases in size. Immigration can offset a low fertility rate.

[3] All fertility rates in this paragraph are from the World Bank Group (undated-b).

[4] For a consistent anecdotal explanation of China's low fertility rate, see Qian (2024).

[5] These trends are noted by many other authors and are apparent in data from the United Nations Population Division (2022). *Hukou status*—which is a system that requires household registration and determines where individuals can work—adds another complicating dimension to labor supply analyses in China by essentially limiting mobility within the country; finally, the drop in labor force participation among women in urban areas over the past few decades, which is linked to increased educational attainment and potentially to child care costs, also played a role (Xin, 2023).

and the Scandinavian countries in Europe, countries in North America, and countries in South America. The only notable exceptions are in countries in sub-Saharan Africa.

Demographers describe the population change observed in most countries as an outgrowth of a *demographic transition*, a pattern that has been followed by most countries, including China, to date. A demographic transition begins with high rates of fertility and mortality, during which a country's population is nearly stable or grows slowly because mortality rates are close to fertility rates. As health improves, mortality rates fall. During this phase of transition, the population begins to increase, often rapidly. At this point, a *population dividend* occurs, resulting in substantial economic growth and a drop in poverty.[6] Following this period of economic growth, fertility rates typically decrease, and population growth rates drop as well. Finally, fertility and mortality rates both stabilize at low levels, leading ultimately to a decline in the population size. At this point, the retiree-to-worker ratio increases, straining pension and entitlement systems.

Figure 3 illustrates China's demographic transition over the past 200-plus years and its implications for the size of China's population over time. China was especially well positioned to collect a population dividend. Fertility was already relatively low, and China invested in human capital in a population that was largely agricultural. Together, these factors resulted in additional workers, fueling growth. Although the rate of change and absolute values of fertility rates might vary across countries, the general trends are similar in the so-called *Asian Tigers*, allowing Hong Kong, South Korea, Singapore, and Taiwan to realize growth rates of about 7.5 percent for more than 30 years (World Bank National Accounts Data, undated).

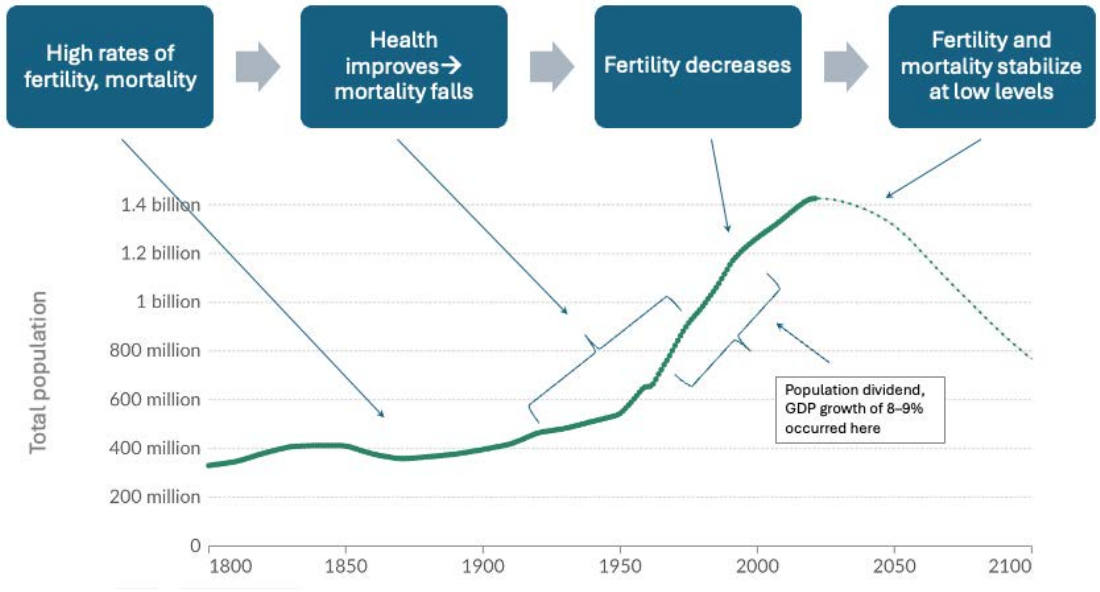
Aging Population

In China, as in other countries, the decline in the fertility rate has led to notable changes in the age distribution of the population. Because China has practically no immigration, birth rates are a determining factor of the size of the population. As illustrated in Figure 4, China's once youthful population is now aging rapidly. Figure 4 tracks China's total population, which peaked in 2020 and is expected to decline by 2030, as well as the size of distinct age groups. The largest change is in the makeup of the population; youth (i.e., individuals under the age of 18) numbered about 400 million and made up more than 35 percent of the population in 1990, but they are predicted to number fewer than 240 million and make up less than 20 percent of the total population by 2030. The largest growth during this period is predicted to take place among older adults (those aged 50 to 79); in 1990, there were about 170 million adults in this category, and they made up 11 percent of the population. But by 2030, older adults are predicted to number about 525 million and make up about 33 percent of the total population. Thus, although there were more than two youths in China for every older adult in 1990, by 2030 there will be more than two older adults for each youth. In 1990, the population above age 80 (i.e., the elderly population) in China was quite small; there were 50 youths for each

[6] Some authors use the phrase *demographic window of opportunity* to describe this period in which the labor force is large and relatively unencumbered (Sciubba, 2022). This phrase and the general process are commonly discussed in scholarship related to development. For example, see Shambaugh (2016); World Bank and Development Research Center of the State Council, People's Republic of China (2022); and Xiaodong (2012).

elderly adult. In 2030, there will be fewer than five youths for each elderly adult. At that point, the number of elderly adults will be roughly equal to the number of children under age five.[7]

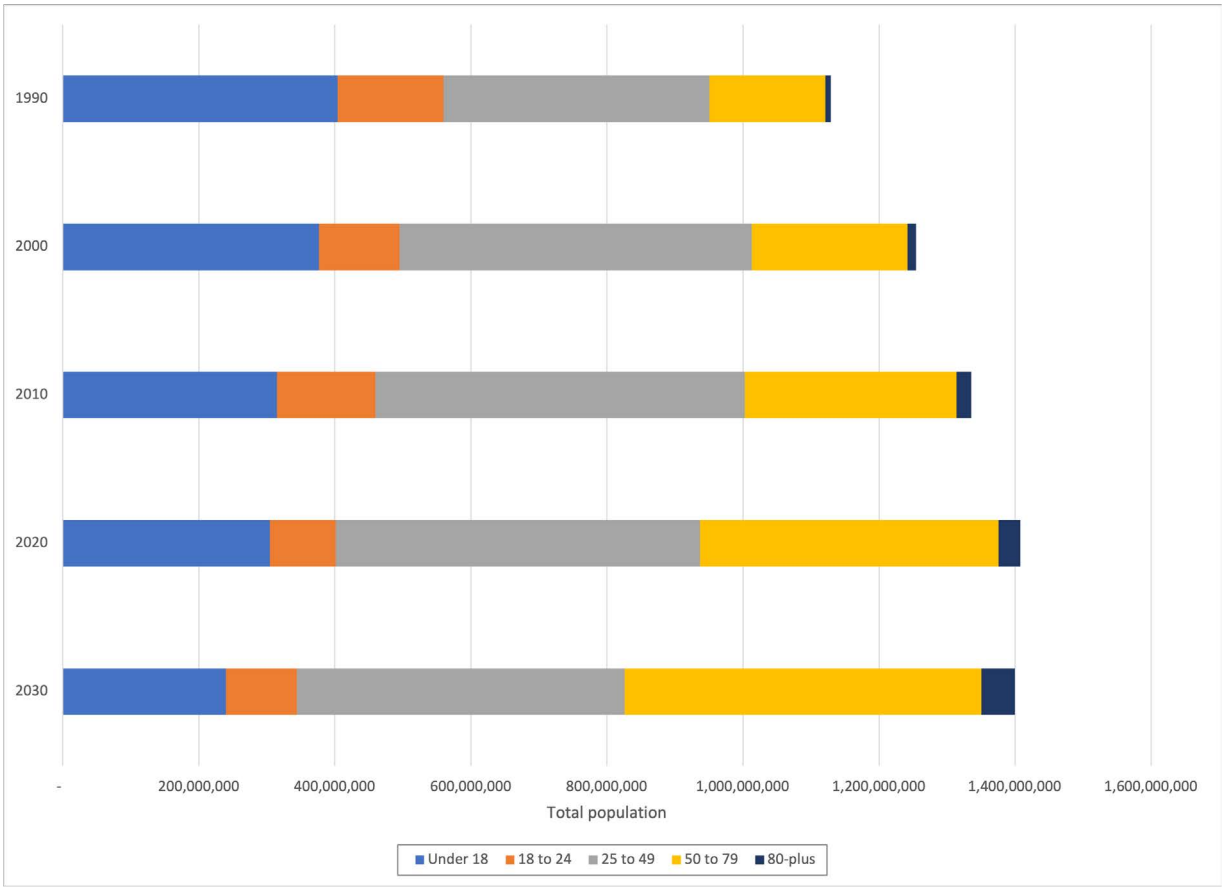
Figure 3. China's Demographic Transition, 1800–2100



SOURCES: Adapted from Our World in Data, undated. Features data from Gapminder, undated; Klein Goldewijk et al., 2023; and United Nations Population Division, 2022.
NOTE: GDP = gross domestic product. The data used in this figure stop around 2019; the period covered by the coronavirus disease 2019 (COVID-19) pandemic is projected. Given the impacts of the pandemic, future data may indicate somewhat different patterns around 2020–2022, and this data could change the projected future population estimates.

[7] All data in this paragraph are from the United Nations Population Division (2022).

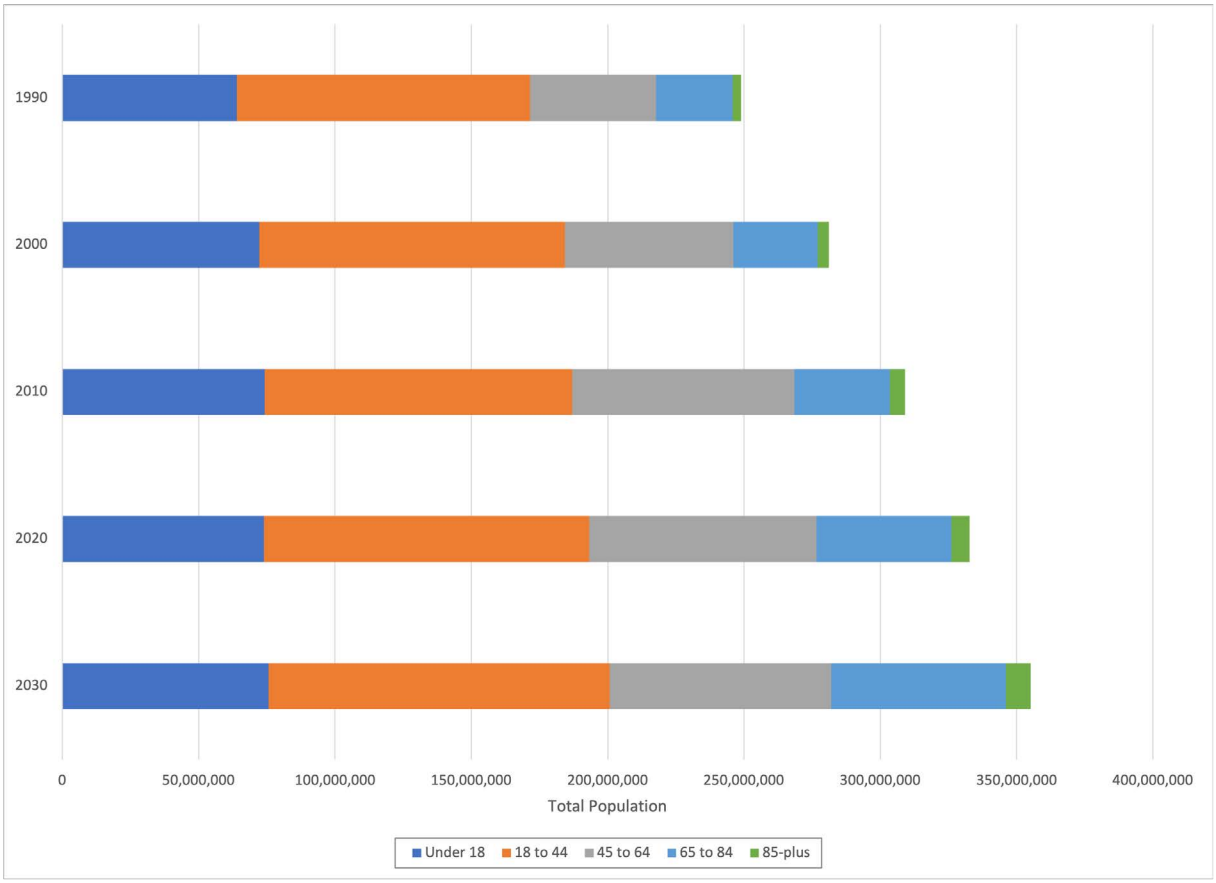
Figure 4. Current and Projected Changes in China's Population, by Age Group, 1990–2030



SOURCE: Features data from United Nations Population Division, 2024, using the standard projection.

Like that of China, the population of the United States is aging. But the rate of change in the United States is far slower than that in China; one key difference is that the U.S. population is predicted to continue to increase over the coming decades. The growth is due not to birth rates (birth rates in the United States are, as in much of the rest of the world, below the replacement rate) but rather to the substantial inflows of immigrants. Because of continued immigration to the United States, the increase in population observed in recent decades (see Figure 5) is predicted to continue (through at least 2050, by most projections). Therefore, despite some aging of the population, the overall size of the youth cohort (the group with the highest potential to serve in the military) is predicted to remain roughly stable; the number of youths under the age of 18 is expected to grow slightly between 1990 and 2030. The largest change in population in the United States will be in the number of adults over the age of 85, which is predicted to increase 300 percent between 1990 and 2030 (United Nations Population Division, 2024). This change has implications for the United States in terms of budget, tax revenues, and strains on social safety net programs.

Figure 5. Current and Projected Changes in the United States' Population, by Age Group, 1990–2030



SOURCES: Features data from U.S. Census Bureau, 2010 Census Summary File 1 (SF1) (U.S. Census Bureau, 2011); and 2020 Census Demographic and Housing Characteristics File (DHC) (U.S. Census Bureau, 2024).
NOTE: The groupings by age differ somewhat between Figures 4 and 5.

Although aging patterns in China appear to be different from those in the United States, the largest difference between Figures 4 and 5 is the scale: In 1990, China's total population was about 4.5 times that of the U.S. population. By 2030, China's total population is predicted to be about 3.95 times that of the U.S. population. Even though China's youth population is shrinking rapidly, in 2030, China's youth population is still predicted to be more than three times the size of the U.S. youth population. This is a dramatic change from 1990, when China's youth population was more than six times larger than the U.S. youth population, but China's population will remain much larger than the U.S. population, at least through the end of the 21st century.

Today, the number of youths in China is similar to the number of people in the United States who are younger than age 75. Despite rapid aging, the Chinese population is (on average) younger than the U.S. population; only about 12 percent of China's population is 65 years of age or older compared with 17 percent in the United States. If we narrow our focus to those most likely to serve in the military (those aged 18 to 23), we find that China's population in this age range is about 100 million, and the size of this cohort is predicted to change very little over the next decade. The United

States has about 26 million people in this age group. As discussed below, the rate of qualification for military service appears to be at least as high (and perhaps substantially higher) in China compared with the United States. Altogether, these trends suggest that China is likely to have sufficient population for the PLA as it is currently structured.

Other Trends Influencing Military Eligibility

Thus far, we have shown that China's youth population is shrinking, but, because of the large size of China's population overall, the size of the youth population is still large and likely to be sufficient to fill the PLA's ranks. But other trends may influence military eligibility among China's youth population. Military enlistees are required to meet a variety of standards. Typically, these include achieving or exceeding set levels of education, earning minimum scores on standardized tests, passing a variety of health-related tests (e.g., weight-to-height, vision, hearing, health history), and meeting requirements pertaining to past behavior (sometimes referred to as *moral* or *behavioral requirements*). Among young people in the United States, the vast majority do not qualify for military service.[8] Because we do not have a consistent measure of the characteristics of young people in China who qualify for service, we document the extent to which the Chinese population meets a few conditions and requirements based on current rates of obesity and asthma, as well as current and predicted education levels.

Although measuring and comparing childhood obesity rates across countries is difficult because of differing standards, there is evidence that childhood obesity rates have increased sharply in China in recent decades. In the United States, childhood and adolescent weight standards are based on population distributions, with overweight and obesity standards defined at the 85th and 95th percentiles, respectively (Ogden et al., 2014). China's standards are less well documented. Nevertheless, evidence suggests that levels of obesity and overweight in China are lower than among children in the United States.[9] Possibly because of these trends, China has launched a substantial program to decrease rates of childhood and adolescent overweight and obesity (Zhenggang and Ping, 2023). The program includes education for children and their families, as well as increased physical activity in all schools. The program works in concert with a larger program that focuses more broadly on children's health, well-being, safety, education, environment, and welfare, as well as additional support for families (National Bureau of Statistics of China, 2023; Zhenggang and Ping, 2023).

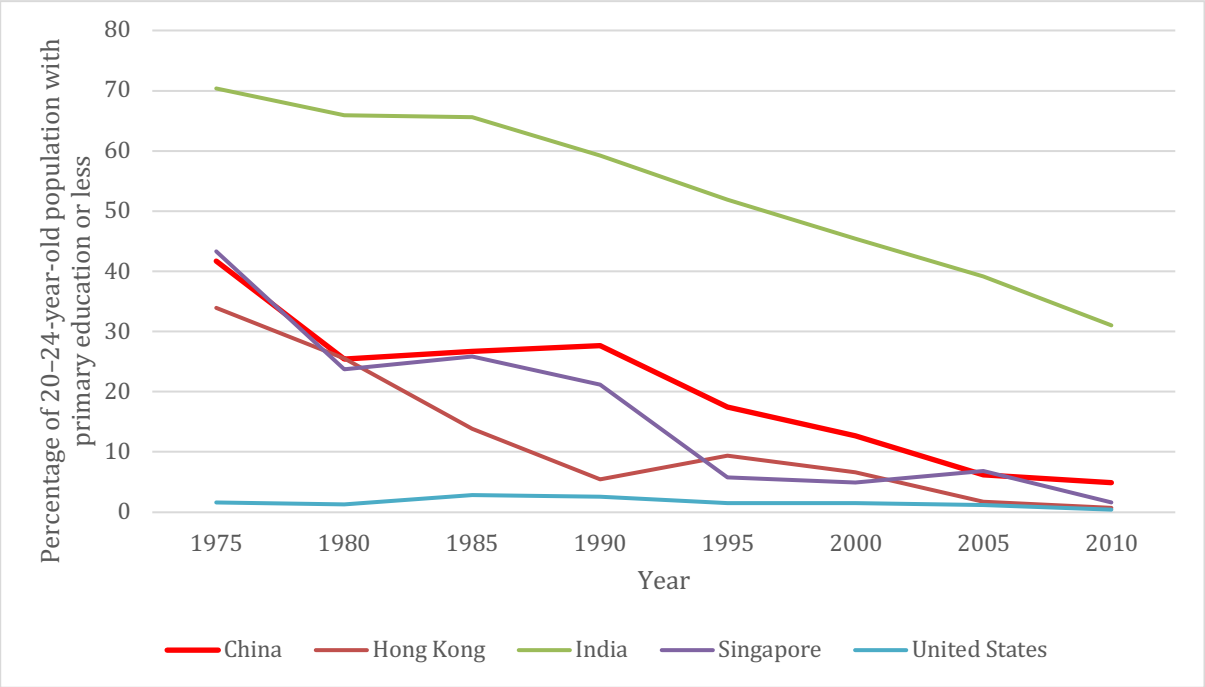
Childhood asthma rates in China have also increased in recent decades, more so among boys than among girls, but remain relatively low to date. The best estimate is that rates are under 4 percent, even for boys (Yahui et al., 2023). In comparison, U.S. asthma rates among adolescents and children are estimated at between 7 percent and 10 percent (U.S. Centers for Disease Control and Prevention, 2023).

[8] For example, a 2020 study of Qualified Military Available found that only 23 percent of the youth population qualified for military service without a waiver (U.S. Department of Defense, undated).

[9] See NCD Risk Factor Collaboration (2017); Ogden et al. (2014); Ogden and Flegal (2010); Sanyaolu et al. (2019); Yu (2021); and Zhenggang and Ping (2023). The patterns of overweight and obesity observed in China are somewhat similar to those in India and Mexico, two other countries that went through a rapid epidemiological transition (Jaacks et al., 2019; NCD Risk Factor Collaboration, 2017).

Education rates in China are unlikely to affect its ability to fill the current PLA's ranks, even though levels of education still lag behind those of some other countries. Figure 6 plots the percentage of young adults (aged 20–24) who have only primary education or no formal education. There are many ways to measure educational attainment; this measure captures those who would most likely struggle to complete military training. Figure 6 shows that the levels of education increased especially rapidly in China and in India between 1975 and 2010; by 2010, more than 66 percent of young adults in India and about 95 percent of young adults in China had attended secondary school. Although average years of educational attainment, as well as college attendance, are higher in the United States (and in Hong Kong and Singapore) than in China, extremely low levels of educational attainment are nearly equal in the United States, Singapore, Hong Kong, and China. This suggests that the vast majority of young people in China have obtained enough education to complete military training. However, if China decides to develop a more highly educated military force, educational levels could become a more important limitation; as of 2010, young adults in China had an average of nine years of schooling, compared with 13 in the United States.

Figure 6. Percentage of Young Adults with Only Primary Education or Less, by Country and over Time



SOURCE: Features data from World Bank Group, undated-a.
NOTE: Figure plots Barro-Lee estimates of the percentage of young adults, aged 20–24, who have primary education or no formal education, over time.

Factors Behind China's Economic Growth and Likely Future Economic Growth Path

China still has a relatively large youth population compared with other countries, and this will remain true at least in the near term. In our assessment, other pressures are likely to be more predictive of the future success of the Chinese economy than basic demographics. Examples include the growth rate of per capita incomes, increasing levels of automation, and changes in trade patterns. Within China, issues in the banking and real estate sectors, as well as the pattern of elites moving assets abroad, are expected to place continuing internal pressures on the economy. In this section, we briefly consider how trends in economic growth in China are likely to change in the near future and the implications of those changes for China and the United States.

Forty years ago, China was a very poor country. Over the past 40 years, China's economic growth has been unprecedented in the contemporary era, pulling nearly 800 million people out of poverty. Poverty can be measured in a variety of ways, but based on China's standard, the poverty rate fell from 97.5 percent to 0.6 percent over the past four decades. Although other countries (especially other Asian countries) have reported similarly rapid growth rates over lengthy periods, China's growth has persisted longer; it has been sustained for over 40 years. But even after this sustained period of growth, China's per capita income is only now approaching the world average. Today, the country's per capita income is about one-sixth of that of the United States.

A comparison with India illustrates just how impressive China's development has been. By World Bank standards, India's poverty rate decreased from about 40 percent in 2004 to about 11.9 percent in 2021. This represents a change from about 450 million people in poverty in 2004 to about 170 million in 2020–2021, or roughly 280 million fewer people in poverty. This is a significant change during a period of robust economic growth. However, the change in India is dwarfed in terms of the number of people exiting poverty when compared with China. The difference is explained in part by differences in growth rates: India's annual growth rate since 1980 has averaged just under 6 percent; China's has averaged just over 9 percent.[10]

Such sustained growth over much of the past four decades, coupled with the size of this growth, has had large implications for China internally. For example, 1985 to 2008 was a period of movement toward a more market-based economy, as well as increased income inequality (World Bank and the Development Research Center of the State Council, People's Republic of China, 2022). Consequently, in 2009, the central government considerably strengthened the social safety net (e.g., pensions and other services) for those in rural areas (World Bank and the Development Research Center of the State Council, People's Republic of China, 2022).

One factor that fed into this unprecedented growth was the relatively low fertility rate *before* the enactment of the one-child policy, which gave more women the opportunity to take jobs outside the home. At the same time (just prior to and just after the one-child policy was enacted), education levels

[10] Authors' calculations based on World Bank National Accounts Data (undated). But we offer a word of caution about the absolute growth rates. Local governments in China have long been incentivized to overstate growth; therefore, China's National Bureau of Statistics typically corrects the national rate. However, the corrections appear to have been insufficient after 2008; as discussed in Wei et al. (2019), the implication is that the true growth rate in the 2008–2016 era likely was 1–3 percentage points lower than suggested by the official figures (although the official figures also reflect decreased growth rates in this period). No such analysis exists for the post-2016 period.

increased. This, too, was helpful in driving China's growth. But given that fertility rates were already falling prior to the policy, it could reasonably be argued that China's fertility rate would have continued to fall even without the policy.

Other drivers, such as economic reforms and government investment, also contributed to China's recent economic growth (see, for example, Xiaodong, 2012). Factors contributing to growth include the realignment of incentives, both for agricultural workers and for business owners and managers, as well as some privatization. Nonstate firms were allowed to enter new industries, and some trade barriers were removed. The loosening of the hukou system also likely fueled economic growth. Traditionally, movement between Chinese provinces has been limited, which has limited eligibility for many benefits to only those who officially reside in the province.

What do these factors mean for China's future? While impressive, China's economic growth began to slow more than a decade ago, and this pattern is likely to continue in the near future. The COVID-19 pandemic hit the country hard, and there are serious problems in the banking and real estate sectors (Pettis, 2023; Shambaugh, 2016; Xiaodong, 2012). Economic elites continue to move funds abroad.[11] Although the pension and health care systems have improved, they remain inferior to what is available in other countries, even in countries with incomes similar to those in China. These and other concerns, such as corruption, civil unrest, and inequality, are likely to drag down future economic growth rates. Without continued robust growth, China will struggle to escape the middle-income trap and to become a relatively wealthy country.[12]

There is a sense that China's population has accepted a bargain of high economic growth for few personal freedoms (Ash and Kan, 2020; Shambaugh, 2016). Whether China can continue this economic growth while maintaining the current level of authoritarianism will be one of the most significant factors in determining China's future, as many scholars equate development with democratization, even though this relationship is not well understood (Shambaugh, 2016). Although these factors will likely cause several strains within China, they do not appear to have major repercussions for the PLA, at least not in the short run.

The PLA's Plans and the Likelihood of Fruition

China's military reform and modernization efforts extend back to the 1980s and the aftermath of the Cultural Revolution. Under Deng Xiaoping, the PLA initiated several reforms designed to prepare the PLA to fight against the more modern and well-equipped Soviet military. Beginning with U.S. military operations against Iraq in 1991, Beijing realized that its reforms were inadequate in the face of the U.S.-led revolution in military affairs. In the three-plus decades since Operation Desert Storm, the PLA's modernization efforts have had two primary thrusts—technological modernization and

[11] These points have been raised by many authors. See, among others, Shambaugh (2016); World Bank and the Development Research Center of the State Council, People's Republic of China (2022); and Xiaodong (2012).

[12] The middle-income trap and the Lewis turning point express the idea that countries frequently struggle to continue rapid development after workers have shifted from the agricultural sector into manufacturing and wages have increased. See, among others, Shambaugh (2016) and World Bank and the Development Research Center of the State Council, People's Republic of China (2022).

institutional reform—encompassing the organization of the PLA, its missions and responsibilities, its doctrine, its training and education, and its operational concepts, among other areas.

The scope and the complexity of PLA modernization since the early 1990s have forced the PLA to rethink its historical approach to both personnel and readiness. Historically, the PLA was an infantry-centered conscript military that drew primarily from China's large rural peasant population (Allen, 2022). PLA personnel were poorly trained and educated. As China's leaders recognized shortfalls in the PLA's technology, organization, and operations, they realized that future success would require improvements in (1) readiness, (2) technical expertise, (3) new-type combat forces, and (4) reliability. To facilitate these improvements, the PLA revised its Military Service Law and updated its Regulations on Conscription Work (People's Republic of China Ministry of National Defense, 2017; Zhang, 2023).

Personnel Requirements and Challenges

Guidance issued by Chairman of the Central Military Commission Xi Jinping has called for the PLA to prepare for military struggle (State Council Information Office of the People's Republic of China, 2015), a call centered on the three central ideas of informatization, joint operations, and systems warfare. Xi's vision for the PLA—which builds on ideas from both Jiang Zemin's and Hu Jintao's tenures as chairmen of the Central Military Commission—is a radical departure from the PLA's historical model (State Council Information Office of the People's Republic of China, 2015).[13] Most notably, China's military leaders recognize that Xi's vision depends on the PLA's ability to acquire and develop talented people (i.e., educated, high-aptitude, and technically skilled recruits). Likewise, the PLA's efforts to develop an informatized, joint force capable of executing systems warfare will require officers and noncommissioned officers capable of making decisions in uncertain situations and willing to exercise innovation and creativity in highly complex operational environments (Yu and Li, 2024; Gao, 2023). A key question is whether PLA institutional reforms will accommodate and incentivize these attributes and whether PLA recruitment can attract these types of recruits.

The PLA's recruitment efforts in recent years have prioritized college-educated youth with science and engineering backgrounds (Allen, 2022). The PLA has also instituted programs that would allow former noncommissioned officers who have left active service to reenter the PLA and rejoin the units to which they had been assigned. However, recent PLA clarifications on both its Military Service Law and Regulations on Conscription Work strongly suggest a host of problems with the PLA's recruitment efforts, including corruption, forced conscription, evading conscription, and refusing to serve once recruited (Blasko, 2021; Corbett and Singer, 2023).

The challenges of acquiring top-tier talent for the PLA are not new for China's military leaders. The problem has been a persistent one since the beginning of the PLA's post-1991 reform efforts. From a purely statistical standpoint, as discussed above, the PLA has a vast pool of talent from which it can draw. However, the PLA has struggled to attract top-tier talent, particularly from China's best

[13] For more in-depth discussion of the central ideas, see Cozad et al. (2023).

universities. In 2023, the PLA was expected to draw nearly 90 percent of its recruitment for the year from recent high-school graduates and graduates from PLA academies (Chan, 2023).

Along with problems attracting candidates with the desired educational credentials, the PLA has expressed concern regarding a host of health and physical fitness issues that have limited the proportion of Chinese youth who meet PLA health and fitness standards (Zhang, 2024). Both PLA publications and Western press have highlighted issues, including obesity, vision problems, poor physical fitness, and depression, that have led to high percentages of disqualifications among potential recruits (Hundman, 2023). Although the overall rates of these individual issues in China may not be that high, the PLA has cited problems in these areas as problematic for recruitment overall.

Despite more than 11 million students graduating from China's universities in 2023 and record-high youth unemployment rates of over 20 percent in May 2023 (China's government has since suspended reporting on youth unemployment rates) (Hawkins, 2023), PLA laws, regulations, and recruitment programs strongly suggest that the PLA has not had the level of success it requires in its efforts to improve the overall level of talent in the military.

The PLA Today

Despite what appears to be a large available population from a demographic standpoint, social factors are also contributing to the PLA's recruiting challenges. For one, negative perceptions of the PLA limit the quality and educational background of those willing to join. In general, life in the PLA is widely perceived as harsh, and the economic and social benefits accruing from military service are perceived as extremely limited. Both desertion and efforts to avoid conscription are widespread problems (Hundman, 2023). The PLA's many remote locations for its bases are unattractive to many recruits. Conditions for conscripts and new recruits are typically harsh. The PLA leadership recognizes that social engagement, entertainment, and engagement with unit leaders have all lagged.

The PLA has instituted a variety of carrots and sticks to make life in the PLA more attractive. Pay has been increased, particularly for those with a university education (Clay and Blasko, 2020). In addition, college graduates are eligible for student loan repayment (Li, 2022). For those who have been admitted to college but enter the PLA, their enrollment will be held until their term of service is over; after their service, they will face reduced tuition fees. The PLA has also invested heavily in entertainment, such as musical instruments and jukeboxes (Areddy and Wang, 2014). Those who do serve are offered post-service employment in state-owned enterprises and see service as a route to party membership, although this is mainly for officers.

The PLA press has attempted to portray the PLA as providing a better environment. It regularly highlights improved living standards, access to services, and social activities among PLA members. Many articles discuss the quality of life at remote outposts. The PLA official media also regularly appeals to the patriotic nature of service and historical figures, particularly targeting college graduates.

Campaigns to recruit directly from universities have met with limited success. Despite high unemployment among Chinese university graduates, most Chinese youth prefer to seek job opportunities outside the military. The PLA has also instituted programs to promote a more inclusive environment. One program, the "three democracies," is focused on promoting lower-level input into decisionmaking; another program, "golden ideas," is a suggestion box–type system that rewards ideas

that are put into action (Li, Zhang, and Zhang, 2024; Zhang, Deng, and Xie, 2024). Both programs, mentioned in the PLA press, suggest efforts to present the PLA as being less top-down and authoritarian than in the past.

There are also some interesting perspectives within the PLA about the effects of the one-child policy. PLA leaders have expressed concerns not about whether there will be enough recruits but about whether recruits will be suitable in terms of psychological resilience and physical fitness (Chan, 2014; FlorCruz, 2014). Over 70 percent of PLA personnel were the only children in their households (FlorCruz, 2014). Both the PLA and non-PLA press have discussed complaints from senior officers about the quality of these recruits, including that they are spoiled and pampered, that they have poor physical fitness, and that their psychological resilience is in question (Chan, 2014; FlorCruz, 2014). In recent years, the PLA has begun to emphasize psychological wellness, focusing not only on building the resilience needed to deal with stressful wartime environments but also on helping individual recruits adjust when joining the PLA (Hellmann, 2014; Kai, 2023; Yang, 2022; Zhou, 2024). Physical fitness has been another area of emphasis within the PLA because of many training-related injuries (Liu and Zhang, 2022). Related to the *one-child generation* (i.e., those born during the period when the one-child policy was in place) are PLA press reports about the need for grassroots leadership and improving cadre relationships with troops by listening to their ideas and showing respect for juniors.

It could be argued that promoting inclusiveness and accommodating the one-child generation are similar to changes taking place in the U.S. military and other Western militaries. But within the PLA, these actions represent a radical change from an extremely harsh, authoritarian environment with rudimentary, spartan conditions for recruits. Despite these efforts, attracting recruits with strong educational backgrounds will remain a challenge. Evolving from a system in which numbers mattered more than a recruit's skill set and education to one more heavily dependent on technical skills and operational proficiency is proving difficult and likely will limit the PLA's objective to build a technically advanced and informatized military.

Final Thoughts

China's demographic trends do not portend a crisis for the PLA; there will be plenty of future recruits to fill the ranks. The PLA's primary demographic challenge will be whether it can build and develop the type of military that Xi envisions. Thus, the problem is not solely a demographic challenge; it includes cultural, social, and political components. China's future operational model requires access to talent that it has struggled to obtain, in part, because of the PLA's culture and role in society. The elite force that the PLA has envisioned may be out of reach based on its ability to attract talent, which appears to be a problem it cannot overcome despite repeated attempts.

Beijing recognizes that the PLA's conscription system is, in many ways, incompatible with its institutional modernization objectives. The Chinese Communist Party sees conscription as a vital link between the people and the party. This philosophy will not go away, but it is unclear how effectively it can be adapted to the requirements that Xi has placed on the military. The system the PLA is pursuing has characteristics of the military model that has developed in the United States and the West over time. But it is a model that is suited to the general cultural, political, and social attributes of

Western societies (which tend to be individualistic, democratic, and less hierarchical), not to the authoritarianism that is deeply rooted in China's society.

Thus, China's economic and social environment will likely limit the PLA's ability to get the "right" people in its ranks. If the PLA cannot get access to the types of recruits it needs, it may be forced to rethink its goals and assumptions about modernization, specifically whether it can adopt a Western or quasi-Western operational model. The alternative may be to face the reality as to the type of military it can achieve with a largely conscript force.

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NATIONAL SECURITY RESEARCH DIVISION

China is experiencing rapid demographic change as young people are making up an ever-smaller share of the population. At the same time, China is seeking to modernize the People's Liberation Army (PLA). These two topics generally have been considered separately to date.

In this report, the authors place China's current population dynamics in context to consider how demographic changes will affect the PLA and China's broader society and to improve understanding of China's military strategy and of the choices China will likely face in the near term. First, the authors discuss China's current and past fertility rates, comparing trends in China with those in other countries. Next, they document China's age distribution and compare it with that of the United States. They discuss other specific health- and education-related trends that will influence PLA recruiting, present information about China's past and its likely future economic growth rates, and analyze the implications for the PLA and the country as a whole. Finally, the authors discuss the PLA's aims and the ways in which demographic and other trends may influence its capacity to achieve its goals.

The authors' analysis reveals that China's demographic trends do not portend a crisis for the PLA. However, China's economic and social environment will likely limit the PLA's ability to build the type of military that Chairman of the Central Military Commission Xi Jinping envisions. If the PLA cannot access the types of recruits it needs, it may be forced to rethink its goals and assumptions about modernization.

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