

Integrated Policy Strategies for China's Aging Population and Low Fertility Challenges

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Abstract. China's unprecedented demographic transition, marked by declining fertility rates, population aging, and negative growth, poses systemic risks to its economic sustainability and social stability. This paper examines the multidimensional linkages between demographic shifts and economic systems. By analyzing China's labor market contraction, pension deficits, healthcare financing pressures, and intergenerational inequality, the study reveals how these challenges are interconnected and exacerbated by institutional inertia. Drawing comparative insights from other countries, the paper proposes a holistic policy framework including labor market reforms to promote flexible employment, pension system restructures, and family support ecosystems featuring subsidized childcare and gender-inclusive parental leave. Additionally, healthcare financing innovations such as preventive care integration are urged to address aging-related costs. The findings emphasize the urgency of transitioning from a 'demographic dividend' reliance to a quality-driven development model, ensuring equitable resource allocation across generations and regions. This research contributes actionable strategies for policymakers to navigate China's dual challenges of low fertility and rapid aging while fostering sustainable population governance.

Keywords: economic development, aging population, labor market, healthcare

1. Introduction

In recent years, demographic changes in China have received much academic attention because of their unprecedented magnitude and serious societal implications [1]. Official statistics published in early 2023 indicated that China had entered a period of negative population growth for the first time in 60 years. The 2024 projections from the China Statistical Yearbook not only showed a slower population growth rate but also a lower-than-expected total fertility rate (TFR) [2]. These factors severely challenge economic sustainability, social welfare, and intergenerational equity. How to respond to low fertility and population aging has become the focus of research.

In terms of academic research, there has been a shift from population quantity to population quality and population structure, hoping to make full use of the advantages of human resources, transform the demographic dividend into talents dividend, and promote the development of high-quality population. However, most of the current studies only focus on demographic projections, or single policy interventions such as demographic response or pension reform. Few studies have systematically analyzed the relationship between demographic structure and the economy, and have not made good use of international experience, such as Japan and South Korea, which have undergone similar processes in the past.

This paper studies the links between the changed demographic structure and the economic development of China from multiple dimensions and integrates international experience to promote overall reform of labor flexibility, pension reform, subsidized childcare, and preventive health care, and to make the development of China less dependent on the demographic dividend and based on human capital.

2. Overview of China's demographic transition

China's demographic landscape is undergoing unprecedented transformations characterized by rapid population aging, persistently low fertility rates, and negative population growth. By the end of 2021, China's elderly population (65 years and above) has reached 200 million, showing not only a large scale of aging population, but also a much faster pace of aging population growth than other aging countries [2]. According to projections from the United Nations World Population Prospects, China's population aging trajectory is expected to intensify, with the proportion of elderly citizens forecasted to reach 26.1% by 2050 and rise to 30.1% by 2075. Notably, China demonstrates the most rapid demographic transition pace among industrialized nations, achieving deeply aged society status that typically spans multiple generations in comparable developed economies [3]. The phenomenon of aging before being rich is also serious. The Gross Domestic Product (GDP) per capita of China was just above \$1000 when China entered an aging society. However, developed countries like Japan, had a GDP per capita of about \$5,000 in 2000, indicating that they had sufficient financial resources to deal with population aging, while China was unable to afford the aging issue at a low level of guaranteed income.

China started a new two-child policy in 2015 and a three-child policy in June 2021 to solve the low fertility rate problem. But even though one-child policy stopped, the birth rate may not rise much. According to the data from the Seventh National Population Census, TFR of China has dropped to 1.3, much lower than 2.1 as the threshold for population replacement. It kept dropping in the years after that, and China entered into the stage of natural negative population growth. Women of productive age (15 to 49 years) had a number of about 46.78 million, accounting for 21.98% of the whole population of China. It showed the low fertility potential of China.

For the past twenty years, China's NGR fluctuated between 7.5‰ and 4.5‰. However, NGR has taken a dramatic downturn in recent years. In early 2023, the central government announced that the country's population growth had been thrown into reverse for the first time since 1961, with an NGR of -0.60‰, from which it dropped to -1.48‰ at the end of the year. The proportion of population aged 0 to 14 reached its lowest point at 16.3%, illustrating a same negative potential of China's workforce and the passing of demographic bonus [2].

3. Economic implications of demographic shifts

The demographic transition in China, including population ageing, low fertility rates, and a decline in workforce, has considerable ramifications for the economy. This transition influences different aspects of the economy, such as the labor market and social security, and consequently creates a more significant intergenerational inequality.

3.1. Labor market contraction

The demographic transition in China has led to a decline in the size of the labor market, which has the most immediate impact and wide-ranging effect on the economy. From 2015, the working age population has been decreasing by an average of 6.5 million [2]. This is especially worrisome in China's manufacturing industry, where the demographic bonus has been exploited continuously by identifying a large number of young and low-priced workers to achieve low-cost competitiveness and

export growth. This, in turn, has led to an increased labor cost and a shortage of skilled workers, affecting China's standing in world supply chains.

In addition, the decline in the working-age population is accompanied by a faster-than-expected increase in the dependency ratios. Figure 1 illustrates that, the elderly dependency ratio (EDR) had already exceeded 20% in 2021, but continued to increase to 22.5% in 2023. The gross dependency ratio reached 46.5% in 2023, which means that an average two-earner family in China has four elderly persons and more than one child as its responsibility. This negative shift places additional strain on the workforce to support both their younger and older dependents, thus increasing its negative impact on economic productivity.

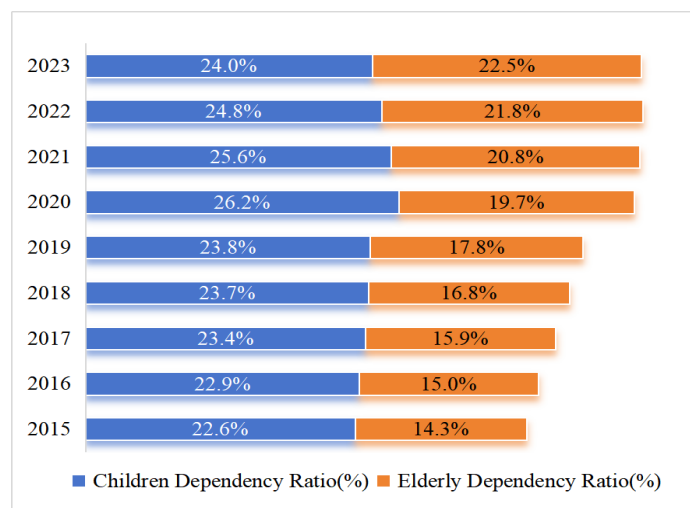


Figure 1. Dependency ratio (data from: National Bureau of Statistics of China)

3.2. Pressure on pension and healthcare systems

The Chinese government faces a looming crisis in funding pensions for retirees, as the shrinking workforce reduces the contributions to social security coffers while the number of beneficiaries increases.

The rapid aging of China's population has placed unprecedented strain on its pension systems, exacerbating fiscal sustainability and equity concerns. First, China's pension assets remain small, accounting for merely 9.1% of GDP, far below international benchmarks and has a narrow coverage that only 67% of urban workers and 40% of rural residents are covered [4]. Second, China's pension system faces a massive implicit debt due to legacy costs from the pre-reform era. The transition from a pay-as-you-go system to a mixed 'social pooling and personal accounts' model left unfunded liabilities. Third, the degree of regional inequality is relatively serious, as many rural elderly currently surviving on basic pensions averaging at 55 yuan per month under the New Rural Social Pension Scheme, far below urban levels. The pooling efficiency of pension funds is low. Affluent provinces accumulate surpluses, while aging industrial regions struggle with deficits.

Population aging has increased the demand for medical services. Healthcare expenditure per capita for the elderly (≥ 65) is 7.25 times higher than that for the younger generation (under 25), as the elderly have a higher demand for medical care, and their medical costs are also higher. The revenue growth of Basic Medical Insurance (BMI) fund cannot match the rising medical expenses, creating a financial pressure on medical financing. According to the predictions, the aging of a system and the increasing retiree/ working-age ratio will bring the fund to a deficit by 2026 [3]. The differences between regions will increase pressure on medical financing, as medical expenses in urban areas are three times higher than in rural areas, and medical resources are distributed unevenly [5]. Long-term

medical and health care needs, chronic diseases and rehabilitation needs are pressing problems of China's medical and health system. In the absence of reforms to promote the sustainability of this system, medical financing will continue to be a large burden on households and the state.

3.3. Intergenerational inequality

In addition to the intergenerational inequality between male and female workers, the aging population has also led to a growing degree of intergenerational inequality between young and old. The Gini coefficient released by the National Bureau of Statistics shows that, although the income gap between Chinese residents has narrowed, it far exceeds the international Gini coefficient warning line of 0.4. While the unemployment rate of urban workers aged 16 to 24 was 21.3% in 2023, the unemployment rate of those over 24 was 4.1% [3]. This suggests that young people are facing challenges in finding good jobs. The high youth unemployment rate is also caused by the structural mismatch between the skills of young workers and the demands of a rapidly developing economy.

4. Policy responses: successes and limitations

In response to declining fertility, China introduced the two-child policy as early as 2015, and then the three-child policy in June 2021 to encourage childbearing. Alongside a suite of supportive policies, China extended maternity leave and paternity leave, and implemented tax cut policies for families with multiple children. In urban areas, the policy has made a modest increase of second child birth intention among middle class families. However, these policies are not able to address structural barriers to childbearing such as the continued shortage of affordable childcare services. If only 5.5% of children under 3 had access to public day-care centers, families are compelled to turn to high-priced private child care or intergenerational childcare [2]. This lack of public day-care service mostly affects working mothers and further promotes gender inequity. The time and energy costs associated with household childcare responsibilities, which are primarily borne by women, are linked to reduced income and increased rates of workforce attrition [6]. Furthermore, workplace discrimination is yet to be addressed by extended leave policies. Housing prices in urban areas remain extremely high, with major cities averaging 9.3 times annual household income [2]. The financial costs associated with child-rearing have been exacerbated by the increasing culture of individualism, and the prioritization of careers and personal development has helped to normalize low fertility.

In the overall pension system, since China adopted the multi-pillar pension scheme in the 1990s, it integrated the two economies into a national pension scheme overall by covering 1.07 million adults by 2024 [7]. In particular, the integration of urban and rural resident pensions under the national pension scheme in 2014 obligated all non-farm workers to contribute to the urban pension scheme, resulting in an increase in rural participation from 40% in 2005 to 73.3% in 2018 [5]. Despite the existence of the pension reform schemes, it only applies to state-owned employees transfers and retirement delay; it does not no longer target poverty incumbence in rural China, or increase the participation of individuals in private pension schemes. The multi-pillar scheme has been in its nascent stage, and attempts for diversified strategies via enterprise annuities and commercial pensions have been limited to an extent.

In healthcare financing, BMI integrated the two economies and achieved a universal coverage of BMI on 97.1% of the population. The Medicare fund reserves increased by 20% annually, attaining 2.97 trillion yuan in 2019. The integration of urban and rural resident health insurance schemes under the BMI scheme for integration held in 2016, which reduced out-of-pocket health expenditures from 35.29% in 2015 to 28.36% in 2020, effectively showing the improvement of medical security quality [5]. The proportion of health needs unmet in rural China is directly reflected in the significant increase in the urban-rural per capita health expenditures. Urban residents seemed to have better access to

health service resources [8]. The surplus of healthcare funding has been maintained in the resource-rich Guangdong Province, while the resource-poor Gansu Province has incurred a fiscal deficit. For the BMI scheme for urban residents, the ratio of the number of retirees to the number of employees is 35.92%, and the fund revenue is strained due to retirees no longer having to pay contributions into the pension scheme. It is projected that China's urban BMI scheme will experience a financial deficit by 2026 [3].

China's recent population policies generally indicate that there is a recognition of potential challenges posed by China's demographic crisis, but do not tackle the root causes of the crisis. The policies, in general, lack the power of transforming the pensions system to unlock the benefits of late economic development, and the policies and other factors have failed to change people's mindsets about population growth, social structure, and economic activity. The government policies will continue to trap China in a low fertility trap, 'aging before getting rich', and a lack of change of the population policies may lead to severe stagnation of population growth in the future.

5. Implications from overseas experience and recommendations

China's demographic challenges demand a holistic, adaptive policy framework. By synthesizing lessons from East Asian peers, such as enhancing labor market flexibility, optimizing social security efficiency, and cultivating inclusive family ecosystems, China can navigate its dual demographic transition.

5.1. Labor market innovation

The South Korean experience shows a glaring omission: the failure to directly address structural labor market obstacles to forming families had rendered their low fertility trajectory irreversible. Labor market reforms to enhance job security and affordability of young adults should be the main thrust of future Chinese policies, from expanding public housing programs on the demand side to enforcing labor contracts and wage protections of non-regular workers on the supply side. In addition, The lessons learned from Japan's 'lifelong active society' policy framework offer a robust coping strategy in the face of population aging through improving labor force participation of older adults. Allowing older adults who are able and willing to stay in the labor force beyond the statutory retirement age would go a long way to reduce per capita societal burden [9]. China should incorporate age-friendly work policies such as phased retirements and life-long skills development programs to help ease labor shortages.

5.2. Social security overhaul

A daunting long-term challenge for China is to safeguard the pension fund balances which are key to 'a sense of security' for the elderly as the national population structure crosses the threshold into advanced aging [10]. To achieve universal security, coverage must be expanded through enforcing employer compliance in the private sector, integrating migrant workers into urban pension system, with the end goal of closing the urban rural gap. At the same time, China can diversify the multi-pillar system by upgrading enterprise annuities and incentivizing tax deferred commercial pensions with more simplified procedures and raising public awareness. What's more, China should tackle the implicit debt head on by separating social pooling from individual accounts and inject state-owned asset transfer to plug the hole, making sure that personal accounts remain fully funded.

China can set up community care systems by working with organizations outside the government. These networks can give health care and other social help to people who need them. This will help reduce the reliance on family, which is unreliable and piecemeal. These networks can also help deal with poverty and fill in the gaps in health care services. In recent years, a large part of Japan's health

care spending has been used for the elderly. Statistics show that this growing spending may not be sustainable. In order to achieve sustainable growth, China should move towards preventive care and consider combining telemedicine and other digital health care services into its health care systems. For example, using wearable technology can help monitor disease and treat the elderly, cutting down on the cost of hospital stays and rehospitalizations [11]. Simultaneously, expanding long-term care insurance pilots and incentivizing private-sector investments in elderly care infrastructure could alleviate public fiscal pressures. South Korea's misallocation of fertility policy budgets warns against over-reliance on universal subsidies. Instead, China should adopt targeted financing mechanisms, such as means-tested healthcare vouchers for low-income families and public-private partnerships for elderly assistive technologies.

5.3. Family support ecosystem

Although policies aimed at stimulating the increase of fertility rate have short-term effects, they cannot fundamentally reverse the problem of low birth rate. The basic orientation of social policy is to relieve everyone from highly competitive pressure, restore the simple life normal, and have children at ease [12]. Therefore, shifting from short-term pronatalist incentives to systemic labor reforms is critical. Japan's work-life balance initiatives, including extended paternal leave to 4 weeks in 2022 and mandatory corporate transparency on leave utilization raised male leave uptake from 6% to 13%. Expanding public care infrastructure reduced unpaid domestic burdens. Japan increased community-based childcare centers from 2,737 to 6,911 and universalized free preschool for under 5-year-olds. Meanwhile, marriage subsidies and fertility medical coverage aim to counter 'no children' trend by legitimizing delayed family formation [12]. China should learn from Japan's fertility policies to build a comprehensive ecosystem featuring state-subsidized childcare centers, extended paternal leave quotas, progressive tax deductions for multi-child families, preemptively expand access to affordable fertility treatments and maternal healthcare. Furthermore, public campaigns to destigmatize non-traditional family structures and incentivize corporate adoption of family-friendly practices such as telework or on-site daycare could reduce work-family conflicts.

6. Conclusion

This study aims at providing a comprehensive view of the challenges for China's governing of a demographic transition: a vanishing demographic dividend, an increasingly aging population, and a growing intergenerational inequality and to walk through the path of policy innovation for society and economy. Through a deep analysis and comparative study of the socio-economic impacts of the demographic transition, the study identified labor market tightening, pension deficit, healthcare debt, forced savings, social inequality, and economic decline as inter-related challenges. The study proposes to transform the tradition of intergenerational relationships and values hierarchy; to build the human capital quality and improve education and training; to promote innovation of public, private, and individual inputs to public outputs; to enhance the flexibility and efficiency of the labor market and social security system; to promote social value on the family, improve the family support system, and ensure equality in basic education, childcare, and medical care; and to strengthen the role of preventive medicine. By drawing a series of lessons from Japan and South Korea, policy proposals such as ending the age discrimination for employees, changing the current pension system to encourage people to work for a longer period, increasing the public another generation, and promoting the application of preventive healthcare technologies were proposed.

There are a number of limitations in this study. Firstly, the study has not deeply explored and revealed the differences and alternatives and solutions for the demographic transition in China. This may have constrained the applicability of the study to policy-making in China. Secondly, the study

has simply linked the experiences in Japan and South Korea to the implementation of the policy in China without evidence-based simulations, which may lack the necessary considerations of cultural and institutional differences. Thirdly, the study has not combined the economic and socio ethics analysis with the study of technology progress, such as artificial intelligence, so as to predict and analyze economic trends accurately. Future research should be carried out on these limits.

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