

Medical Financing Reform and the Pressure of Population Aging: Based on the Comparative Study of High-Income and Low-Income Countries in Asia

Yaning Liang

Beijing Luhe International Academy, Beijing, 101149, China

liangyaning0811@outlook.com

Abstract. The problem of population aging is serious, especially in Asia, reforming medical financing is urgent. Countries with varying income levels face fundamentally different healthcare challenges. This study categorizes Asian nations into two groups using WHO and World Bank medical reports: the first group comprises high-income countries exemplified by Singapore and Japan, while the second includes Thailand -- a low-income nation that has achieved relatively successful healthcare reforms. By comparing the successes and challenges of these groups through data analysis, the research proposes corresponding solutions to address these issues. The study reveals that high-income countries have greater efficiency and capacity than other Asian low-income countries in addressing population aging pressures. In general, the annual increase in life expectancy indicates that Asian nations at various income levels can mitigate healthcare challenges through rational medical financing reforms and strengthened supervision, thereby solving aging-related issues to some extent. In addition, on resource utilization efficiency, targeted measures are required for countries at different income levels: high-income nations should focus on optimizing resource allocation, while low-income countries must first prevent fund mismanagement, pay attention to population aging challenges, and then progressively enhance their healthcare systems.

Keywords: Aging of population, healthcare systems, healthcare finance.

1. Introduction

The problem of population aging is serious, especially in Asia, reforming medical financing is urgent. Studies indicate that population aging has become an unavoidable challenge in global development, especially in Asia [1]. According to U.N. data, the proportion of people aged 65 and above reached 10.4% globally by 2023, this figure will rise to 16.0% in 2050. Low-and middle-income countries are experiencing accelerated aging rates compared to developed nations, resulting in an "aging before becoming rich" phenomenon. The acceleration of aging has directly driven up demand for healthcare resources. Due to the high incidence of chronic diseases and long-term care needs in the elderly group, the proportion of medical expenditure continues to rise. In some countries, the medical consumption of the population over 65 years old has accounted for more than 40% of the total medical expenditure, which brings heavy pressure on the medical system [2].

Meanwhile, as the core link supporting the supply of medical services, the medical financing system is facing multiple contradictions. On one hand, traditional financing models remain overly reliant on government funding and basic health insurance. As aging populations drive rigidly rising medical costs, funding gaps continue to widen annually. For instance, many Asian countries are witnessing slowing growth in accumulated medical insurance fund balances. On the other hand, issues like limited financing channels and rigid allocation mechanisms have become glaringly apparent. Insufficient funding for primary healthcare and chronic disease management among elderly populations fails to meet the diverse needs of an aging society.

In this context, optimizing resource allocation and enhancing fund utilization efficiency through healthcare financing reform has become a critical issue in mitigating the impact of population aging. Particularly for developing countries with large populations and rapid aging trends, establishing a sustainable healthcare financing system serves not only as an urgent response to the changes of population structure but also as an important guarantee for achieving healthy aging.

Existing research predominantly focuses on single-country cases, lacking cross-income level comparative analyses. Moreover, there is insufficient discussion on issues such as "how the efficiency of capital allocation affects the effect of aging alleviation" and "whether the system leak leads to the deviation of reform goals" particularly overlooking the undermining effects of corruption and abuse on reform effectiveness. This study employs a comparative research approach with case analysis methodology, using Asian high-income and low-income countries as samples, and using macro-level data from the World Bank and national health authorities, which includes life expectancy trends and elderly healthcare expenditure as a percentage of GDP. The present study compares fund allocation equity and efficiency across different income levels. As an important mechanism for regulating medical resource distribution and alleviating aging pressures, healthcare financing reform directly affects the quality of life for older populations and sustainable social development. Therefore, exploring its connection with population aging holds significant practical implications.

2. Asian High-income Countries: Resource Optimization and Sustainability Challenges

2.1. Singapore's Pre-reform Health Financing

Current healthcare financing reforms have achieved success in addressing population aging while also presenting challenges. In high-income Asian countries like Singapore and Japan, the pre-reform healthcare system mirrored Britain's "state-funded" model. During the mid-1970s, government funding covered most medical expenses, with minimal personal responsibility, especially some basic services were even nearly free [3]. This state-managed healthcare system provided universal access to affordable medical care, ensuring equitable coverage in the short term. However, the rapid increase in healthcare costs has strained government finances. Moreover, free healthcare may lead to excessive treatment, resulting in inefficient use of medical resources.

2.2. The Situation after the Reform of Medical Financing in Singapore

Singapore's post-reform healthcare system introduced the Medical Savings Scheme (MSS), a social pooling mechanism that covers all citizens and permanent residents. This significantly reduces medical costs for the elderly and chronic disease patients, preventing poverty caused by severe illnesses. Singapore emphasizes individual responsibility through this savings account model, enabling citizens to manage their own healthcare expenses while easing government burdens. The country's relatively small population also simplifies the administration. However, with accelerating aging and rising medical costs, annual claims under the lifetime health insurance scheme are increasing, potentially requiring premium increases or greater fiscal subsidies from the government. Long-term reliance on such schemes could strain public finances. Moreover, there is a big difference in personal financial burden. The scheme relies on contributions from individuals and employers, leaving low-income earners and the unemployed with insufficient savings. Even with supplementary coverage from the dual health insurance system, substantial out-of-pocket payments may still occur during critical illnesses or long-term treatments, offering limited protection for vulnerable groups [4].

2.3. Pre-reform Status of Medical Financing in Japan

Japan pursued social equity, recognizing healthcare as a fundamental right for citizens. This commitment drives the nation's focus on equitable medical insurance coverage, aiming to ensure universal access to comparable healthcare services. Before the 1990s, Japan's healthcare financing system was centered around universal health insurance and substantial government subsidies, providing comprehensive coverage through premiums, fiscal subsidies, and out-of-pocket payments and achieving near-100% coverage. The country ranked among the world leaders in healthcare accessibility, safeguarding citizens' basic health rights [5]. However, with accelerating population aging (the proportion of people aged 65 and above rising from 7% in 1970 to 12% in 1990), medical

costs have grown dramatically. Fiscal subsidies became unsustainable, leading to chronic deficits in the national health insurance fund [6].

2.4. The Situation after the Reform of Medical Financing in Japan

Through healthcare reforms, Japan has increased out-of-pocket contributions and implemented strict drug price controls, successfully alleviating the medical deficit and promoting effective utilization of medical resources. However, the increased personal burden and reduced fairness have affected the accessibility of healthcare for low-income groups and the elderly, leading to the gradual emergence of "medical poverty" [7].

3. Low-Income Countries in Asia: The Dilemma of Coverage and Resource Scarcity

3.1. Thailand's Pre-reform Health Financing

Consider the healthcare systems of Southeast Asian low-income countries, with Thailand as a prime example. Before reforms, patients faced high out-of-pocket expenses, with individuals bearing a significant portion of medical costs. This created economic hardship for low-income groups when facing illnesses. Premium medical services were concentrated in urban areas and specific demographics, while rural populations and vulnerable groups struggled to access quality healthcare, resulting in glaring inequities [8].

3.2. Thailand's Health Financing Reform after the Situation

The reformed universal health coverage system has achieved comprehensive medical security through establishing a unified national health insurance framework. This reform has broken down institutional barriers between different social groups, significantly reduced out-of-pocket expenses, and enhanced access to basic medical services, particularly providing rural and low-income populations with more stable healthcare security. However, this expansion may lead to increased pressure on medical resources. Universal coverage has triggered concentrated demand for medical services, while the growth of quality medical resources like skilled physicians and equipment lags behind, potentially causing overcrowded hospitals and excessively long waiting times. Meanwhile, due to urban residents' relatively lower income levels, primary care institutions face resource constraints (including inadequate medical staff and equipment), resulting in a noticeable quality gap compared to urban hospitals.

Although the healthcare reforms in these three countries have achieved some results, there are still some problems. In order to more comprehensively evaluate the effect of the reforms, this study obtains the data of life expectancy at birth and the proportion of medical expenditure in GDP from the World Health Organization, and analyzes the effect of the reforms from the perspective of data.

4. Effectiveness of Reform and Country Differences

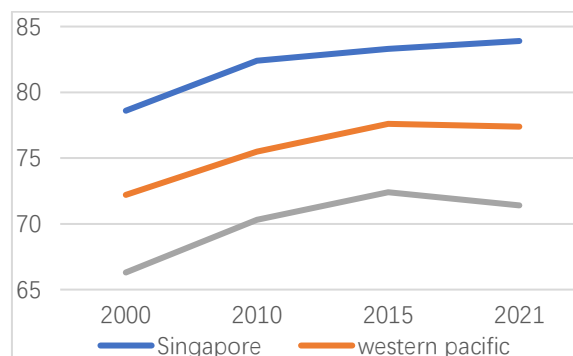


Figure 1. Life expectancy at birth, Singapore [9]

As shown in figure 1, the blue line represents the global average, while the black line shows Singapore's data. Singapore's life expectancy at birth has shown a steady upward trend, significantly exceeding the world average. This improvement reflects advancements in healthcare services, where people now receive better treatment and care. These progressions are closely tied to advancements in medical financing, with increased funding allocated to improving medical facilities, developing new drugs, and other initiatives.

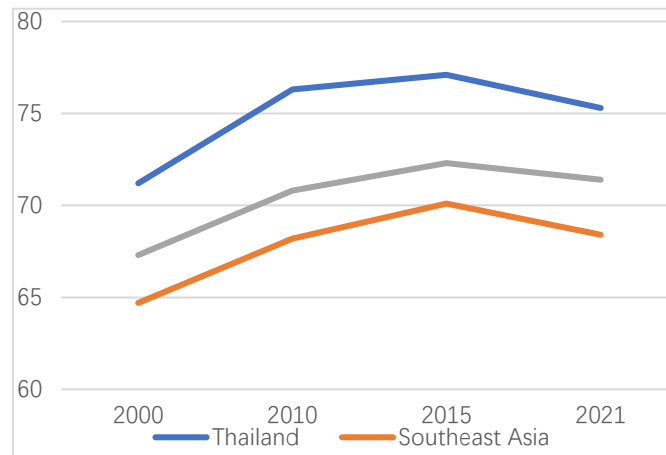


Figure 2. Life expectancy at birth, Thailand [9]

As shown in Figure 2, Thailand, represented by the black line, saw a significant decline in life expectancy in 2021. Although it is still higher than the world average, it is far below some high-income countries such as Singapore which maintains an average of over 80. More notably, other Southeast Asian countries represented by the red line are even lower than the world average.

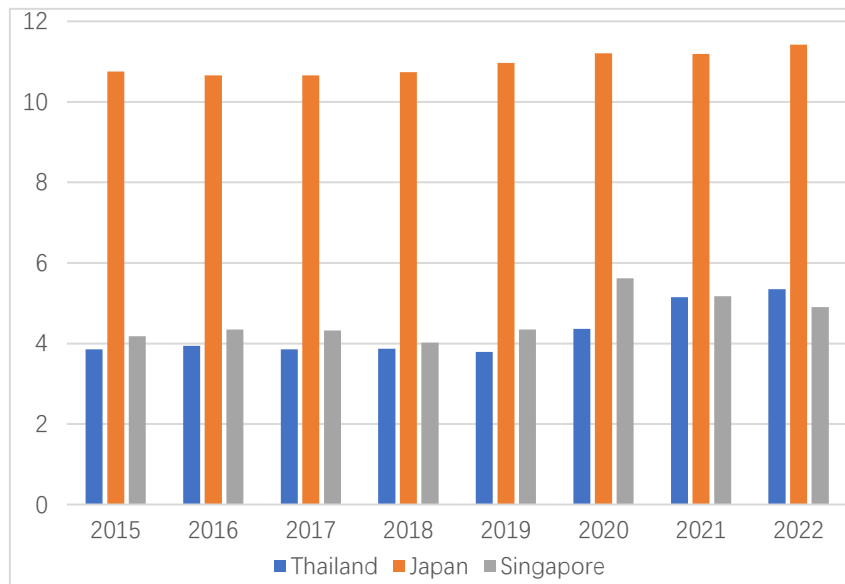


Figure 3. The proportion of medical expenditure in GDP [10]

As can be seen from Figure 3, the proportion of Thailand's medical expenditure represented by blue is much lower than that of Japan and Singapore represented by red line and black line, which may be due to their weak economic foundation and low attention. However, the proportion of medical expenditure in GDP of high-income countries is significantly higher.

5. Comparative Analysis

In general, high-income countries do better in both the equity and efficiency of healthcare services. Despite existing challenges, they benefit from more complete systems and substantial

funding. Take Japan as an example, its medical insurance system covers nearly all citizens with relatively efficient resource allocation. Advanced healthcare frameworks and regulatory capabilities enable better adaptation to population aging. Comprehensive medical services not only extend longevity but also improve their quality of life. Moreover, optimized capital utilization allows more resources to be directed toward senior care services.

Low-income countries often grapple with uneven distribution of medical resources and inefficient fund allocation. Take Pakistan as an example: this region frequently experiences epidemics like malaria and tuberculosis. Rural areas suffer from inadequate medical supplies, while urban hospitals face resource underutilization. At the same time, the infrastructure is backward, the distribution of medical resources is uneven, and there is a shortage of doctors in rural areas. Many people get sick but have no money to treat themselves. Moreover, their healthcare insurance systems remain underdeveloped, and government investment in medical services is insufficient. With an imperfect healthcare system and misused funds, even reforms to medical financing models cannot adequately address population aging, as the elderly's medical needs may still go unmet.

For high-income countries, while the overall situation remains positive, there is room for more refined allocation of medical resources. For instance, policies could guide doctors to work in areas with limited healthcare resources. Simultaneously, encouraging businesses to participate in elderly care services could help alleviate government burdens. Governments might attract corporate investments in facilities like senior care homes and health recovery centers through tax incentives and land concessions.

For low-income countries, priority should be given to strengthening regulatory oversight and severely punishing corruption to ensure the rational and effective use of healthcare funds. Establishing an independent healthcare fund supervision agency is crucial to monitor the entire process of fund collection, allocation, and utilization. Regular public disclosure of fund usage should be implemented to accept social supervision. Any identified misuse of funds must result in strict legal penalties for responsible parties and recovery of misappropriated funds. Simultaneously, financial audits of medical institutions should be intensified to standardize charging practices and prevent irregular charges or false expense reporting. By learning from successful models of high-income countries, developing a tailored healthcare financing model can gradually improve medical security levels. Thailand's experience in enhancing rural healthcare accessibility offers valuable lessons for low-income nations. These countries could adopt similar approaches by increasing investment in basic level medical infrastructure, upgrading facilities with essential equipment and medicines. Additionally, targeted training programs and on-the-job education should be strengthened to enhance medical professionals' skills, thereby attracting and retaining skilled personnel through targeted cultivation and skill development.

6. Conclusion

This study examines the experiences and challenges faced by Asian countries at different income levels in addressing population aging pressures through comparing healthcare financing reforms in Singapore, Japan (a high-income country), and Thailand (a low-income country). The findings reveal that healthcare financing reforms significantly alleviate aging-related medical pressures, though their effectiveness varies across nations based on their development levels.

High-income countries, with a focus on individual responsibility and multi-tiered healthcare systems, have achieved remarkable success in controlling medical costs and improving resource efficiency. Their citizens' life expectancy has consistently exceeded the global average for decades, demonstrating the positive impact of healthcare reforms on public health. However, these nations still face sustainability challenges in their medical insurance systems due to accelerating aging populations, as well as equity issues such as increasing healthcare burdens among low-income groups.

Low-income countries, represented by Thailand, have greatly improved medical accessibility through universal coverage, especially improving the security level of rural and vulnerable groups.

However, limited by the economic foundation, they are faced with difficulties such as resource shortage and poor service quality, resulting in slow growth of life expectancy and vulnerability to public health emergencies.

In conclusion, rational healthcare financing reforms can effectively alleviate the pressure of population aging. High-income countries need to optimize resource allocation to balance efficiency and equity. Low-income nations should prioritize strengthening foundational infrastructure to ensure effective fund utilization and improve grassroots service capabilities. Moreover, addressing elderly healthcare needs in the long run not only helps maintain their health but also enables them to continue contributing to society. Effective healthcare reforms can also enhance overall medical efficiency, potentially encouraging younger generations to have more children, which is a measure that could further help mitigate population aging.

References

- [1] Lin FL, Wang MC. Longevity and economic growth in China and India using a newly developed bootstrap ARDL model. *Frontiers in Public Health*. 2020, 8: 291.
- [2] United Nations. World Population Prospects 2022. July 11, 2022. August 15, 2025. <https://www.un.org/development/desa/publications/world-population-prospects-2022>.
- [3] Hsieh CY, & Lin, W. C. Healthcare systems in transition: Singapore. *Journal of Public Health Policy*, 2005, 26 (2): 188-207.
- [4] Asher MG, & Nandy A. Health care financing in Singapore: Issues and challenges. *Journal of Asian Public Policy*, 2006, 1 (2): 212-230.
- [5] Ikegami N, & Campbell JC. The Japanese health care system: Containing costs and attempting reform. *Health Affairs*, 1999, 18 (3): 26-39.
- [6] Yoshikawa H. Health care reform in Japan: Containing costs and coping with an aging society. *Journal of Health Politics, Policy and Law*, 2002, 27 (5): 849-874.
- [7] Tamiya N, et al. Equity in healthcare access among older people under Japan's universal coverage system: A systematic review. *BMC Health Services Research*, 2011, 11 (1): 302.
- [8] Wibulpolprasert S, & Tangcharoensathien V. Universal coverage policy in Thailand: a step towards achieving health for all. *Bulletin of the World Health Organization*, 2005, 83 (5): 361-361.
- [9] United Nations. World Population Prospects 2022. July 11, 2022. August 15, 2025. <https://www.un.org/development/desa/publications/world-population-prospects-2022>.
- [10] World Bank. Global Economic Prospects: Navigating the Storm. January 10, 2023. August 15, 2025. <https://www.worldbank.org/en/publication/global-economic-prospects>.