# Medical Resource Allocation under Public and Private Insurance Systems: A Comparative Analysis of China and the United States

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**Abstract.** This study employs a rigorous method of comparative analysis to conduct in-depth investigations of the two representative healthcare systems in China and the United States. The Chinese healthcare system is led by the government and has significant advantages. It has successfully achieved wider medical coverage, allowing many people to enjoy basic medical services. At the same time, it has shown initial results in cost control, reducing the burden of medical care on the public. However, the problem of uneven distribution of resources has become prominent, with a significant gap in medical resources between urban and rural areas, and urgent improvement in rural medical conditions. The US healthcare system, on the other hand, is characterized by market driven competition, which stimulates innovation in healthcare and drives advances in medical technology. However, high costs have become a major obstacle, and low-income groups face numerous difficulties in accessing medical services. The study also involves the impact of healthcare expenditures on economic growth and an evaluation of existing policies. Finally, suggestions were put forward to improve resource allocation efficiency, ensure financial sustainability, and draw on international best practices to balance fairness and efficiency, and achieve sustainable development of healthcare.

**Keywords:** Healthcare Resource Allocation, Economic Growth, Health Insurance, China, United States.

## 1 Introduction

The fair distribution of medical resources is a core indicator for measuring social equity and economic sustainability. Different models of medical systems have significant differences in resource allocation, medical insurance system, and accessibility [1]. China and the United States represent two typical medical systems: government-led and market-led. The former emphasizes broad coverage and government control, while the latter promotes medical technology progress through market competition, but the high cost also brings about fairness issues [2].

China's universal medical insurance system ensures that more than 95% of the population has access to basic medical insurance, but medical resources are concentrated


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in first-tier cities, and there is a large gap in medical equity between urban and rural areas [3]. In contrast, the US medical market is highly liberalized. Although it has advantages in medical innovation, the gap between the rich and the poor makes it difficult for some people to obtain basic medical insurance [4]. In recent years, both China and the United States have promoted medical reforms and tried to find a balance between fairness and efficiency, such as China's tiered diagnosis and treatment system and the United States' Affordable Care Act (ACA), but medical equity still faces challenges [5].

This study aims to compare the medical resource allocation models of China and the United States and focus on analyzing their impact on medical equity. Core research questions include: (1) What are the differences in the allocation of medical resources between China and the United States? (2) How do these differences affect urban and rural medical equity and medical accessibility for rich and poor groups? (3) How can the allocation of medical resources be optimized to achieve a balance between equity and efficiency?

## 2 Overview of the Medical Security Systems in China and the United States

### 2.1 China's Medical Security System

China's medical security system has undergone a transformation from public medical care during the planned economy period to a universal medical insurance system after market-oriented reforms. The government's leading role has ensured that the coverage of basic medical insurance (BMI) continues to expand, and the current national medical insurance coverage rate has exceeded 95% [1]. However, the distribution of medical resources remains uneven, especially between urban and rural areas.

Research shows that more than 60% of China's tertiary-level A hospitals are concentrated in the eastern coastal areas, while medical institutions in central, western and rural areas are poorly equipped and suffer from a serious loss of medical talent [2]. Patients often flock to large cities to seek better medical services, resulting in overcrowding in first-tier city hospitals and underutilization of primary medical institutions [3]. Although the government has promoted a tiered diagnosis and treatment system in recent years in the hope of reducing the burden on large city hospitals, residents still tend to go to large hospitals due to their low trust in primary medical institutions, which has limited the effectiveness of policy implementation [4].

In terms of finance, China's medical expenditure accounts for 6.6% of its GDP, which is still at a relatively low level compared to the 17.7% of medical expenditure in the United States [5]. However, as the population ages, the sustainability of the medical insurance fund is facing challenges, and the government needs to find new financing models to ensure the long-term stability of the medical insurance system.

### 2.2 US Medical Insurance System

The US medical system is mainly market-driven, and the government only provides limited medical assistance through Medicare (for the elderly) and Medicaid (for low-income people) [3]. This model has resulted in high quality of medical services and strong innovation capabilities but high medical costs and low social equity.

Medical insurance in the United States is mainly provided by private insurance companies. 67% of American residents obtain medical insurance through insurance provided by their employers, but the proportion of uninsured people is still as high as 8.6% in 2022 [3]. Due to the market-based pricing mechanism, the cost of medical services in the United States is extremely high, with medical expenditure accounting for 17.7% of the GDP, one of the highest in the world [5]. Even if patients have medical insurance, they still need to pay high out-of-pocket expenses, making it difficult for low-income groups to afford the cost of basic medical services.

Supporters of the market-based healthcare system believe that the US model can improve the quality and efficiency of medical services through competition and encourage innovation in medical technology [4]. However, critics point out that this model exacerbates social inequality and makes it difficult for poor groups to obtain basic medical insurance [5]. Although the US government has attempted to expand health insurance coverage through the Affordable Care Act (ACA), its implementation effectiveness remains controversial because the policy still relies on the private insurance market [6].

Although the US healthcare system is a world leader in high-end medical services and innovation, due to the significant gap between the rich and the poor, there are still large differences in the opportunities for different income groups to access medical resources. The wealthy can enjoy the most advanced medical resources, while low-income groups may give up treatment for economic reasons even if they suffer from chronic diseases or major diseases [6]. This shows that the US healthcare system still has difficulty finding an ideal balance between fairness and efficiency.

## 3 The Relationship Between Medical Expenditure and Economic Growth

### 3.1 The Economic Logic of Medical Expenditure

The impact of medical expenditure on economic growth has always been the focus of academic attention. Medical investment can improve human capital, enhance the vitality of the labor market, and promote long-term economic growth [7]. However, excessive medical expenditure may aggravate the government's fiscal deficit, squeeze other public investments, and thus limit economic growth [8].

**The Mechanism of Medical Expenditure Promoting Economic Growth.** Medical investment can promote economic growth through multiple channels. First, it can significantly improve the level of human capital. A healthy workforce not only reduces the possibility of sick leave and early retirement but also improves overall labor productivity [9]. Taking China as an example, the World Bank Health Development Report points out that for every 1% increase in medical expenditure, GDP can increase by 0.5%-1% [10]. In the United States, medical investment is believed to help extend the healthy working years of workers, reduce the incidence of chronic diseases, and thus increase economic output [11].

Secondly, medical expenditure also has a direct industrial driving effect. As an important part of the high-tech industry, the medical industry covers multiple high-value-added fields such as pharmaceutical manufacturing, biotechnology, and medical devices and has strong linkage and growth potential [12]. In 2021, the GDP of the US medical-related industry accounted for more than 6%, and the investment in biomedical research and development reached 130 billion US dollars, which led to active employment and capital [7]. Although China has continuously increased its investment in medical technology under the policy promotion, the direct contribution rate of the medical industry to the GDP in 2021 was still only 2.8% [8]. This reflects that China still has a lot of room for improvement in innovation capabilities, technological autonomy, and scientific research transformation, and the economic potential of medical investment has not yet been fully released.

**Possible Negative Impact of Medical Spending.** Although medical spending contributes to economic growth, if fiscal spending is too high, it may affect government investment in other areas. Taking the United States as an example, in 2022, the US medical spending reached 4.3 trillion US dollars, accounting for 17.7% of GDP, higher than any other country in the world [9]. More importantly, the growth rate of medical costs in the United States is 1.5 times faster than the GDP growth rate, resulting in the continued increase in fiscal pressure [10]. In China, although the proportion of medical expenditure to GDP is relatively low, the growth rate of medical insurance fund expenditure has exceeded the growth rate of fiscal revenue. According to statistics from the National Medical Insurance Administration, it is estimated that by 2035, the medical insurance fund may face a funding gap of 1.8 trillion yuan [11].

In addition, the market-oriented medical system may lead to too rapid an increase in medical expenses. In the United States, due to information asymmetry between insurance companies, hospitals, and pharmaceutical companies, medical expenses are often much higher than in other countries. For example, the price of a box of regular insulin in the United States was as high as US$300 in 2022, while in Germany, it was only US$32 [12]. This market imbalance not only pushed up medical expenditures but also reduced residents' disposable income, affecting the overall consumption level and economic growth [7].

### 3.2 Core Differences in Medical Expenditure Patterns Between China and the United States

The medical systems of China and the United States have fundamental differences in expenditure structure, management methods, and institutional goals. China has established a medical security system with broad coverage and controlled costs, mainly relying on social medical insurance (basic medical insurance) and supplemented by government financial subsidies; while the United States is dominated by commercial insurance, with medical resource allocation driven by private institutions, and government medical insurance (Medicare and Medicaid) only covering specific populations [8].

**High-Cost and High Innovation Model in the United States.** The US medical system emphasizes market competition and technological innovation, forming a highly developed but costly expenditure structure. In 2021, the US biopharmaceutical industry's R&D investment reached US$130 billion, accounting for more than 40% of the global total [9]. At the same time, the price of medical services in the United States remains high. In 2022, per capita medical expenditure reached US$12,914, the highest level in the world [10].

In terms of medical insurance coverage, although the coverage has been expanded after the implementation of the Affordable Care Act (ACA), 8.6% of the US population still lacked medical insurance in 2022 [11]. Although this model encourages innovation, it also leads to problems such as insufficient cost control and lack of fairness.

**China's Low-cost and High-equity Model.** China's medical expenditure structure is dominated by the government, based on basic medical insurance, and controls costs through centralized procurement, price negotiations, etc. The medical insurance coverage rate reached 95%, and medical expenditure accounted for 6.6% of the GDP in 2022, with an overall low cost [12].

However, the problem of uneven distribution of medical resources remains prominent. High-quality resources are concentrated in the eastern coastal areas, while the level of medical services in the central and western regions and rural areas is relatively backward [7]. At the same time, the intensification of aging has brought pressure on medical insurance funds. In 2021, medical insurance fund expenditure increased by 13.2% year-on-year, higher than the growth rate of fiscal revenue [8], which has aroused concerns about the sustainability of the system.

### 3.3 Future Reform Direction

To optimize the positive role of medical expenditure on economic growth, both China and the United States need to carry out medical reforms, focusing on medical insurance fairness, fiscal sustainability, and medical market supervision.

First, in terms of medical insurance fund management, China needs to introduce a diversified financing mechanism. On the one hand, social capital should be allowed to enter the medical insurance fund management system to reduce the government's fiscal burden and improve the efficiency of fund operations. On the other hand, the medical insurance anti-fraud mechanism should be strengthened to avoid waste of funds. In 2021, China's medical insurance fund losses due to insurance fraud reached 3.6 billion yuan, and regulatory pressure continued to rise. The United States can further expand Medicare's drug price negotiation authority and restrict the monopoly of large medical groups to promote fair competition and control expenditures.

Secondly, the two countries can also learn from international advanced experience to optimize the expenditure structure. For example, Nordic countries have achieved a balance between fairness and sustainability through the "high taxation + universal medical insurance" model. In 2021, Sweden's medical insurance fund expenditure accounted for 9.8% of its GDP. The government ensured the stability of the fund through meticulous cost control. Japan relies on the national drug price negotiation mechanism to adjust drug prices every two years, effectively curbing the rising trend of medical expenses. Both China and the United States can draw institutional references from it to adapt to the new challenges in the context of an aging population.

In recent years, the country has continued to advance in the efficiency of medical insurance fund operation, payment method reform, and the construction of a digital medical insurance supervision platform. According to the "National Medical Insurance Development Annual Report (2023)", the expenditure structure of medical insurance funds has been continuously optimized, and the level of regional coordination has gradually improved [13]. At the same time, the China Health Statistics Yearbook (2023) points out that more than 80% of cities and prefectures across the country have achieved access to medical insurance information, which has greatly enhanced the transparency and anti-fraud capabilities of the medical insurance system [14]. These measures provide important support for the optimization of medical resource allocation and the sustainability of medical insurance funds in the future.

# 4 Conclusion

This study systematically analyzes the medical expenditure patterns of China and the United States and explores their dual impact on economic growth. From the comparative results, China, based on the government-led basic medical insurance system, guarantees a high medical insurance coverage rate and basic affordability, but there is still a significant imbalance in the allocation of medical resources, especially between urban and rural areas, and the construction of the grassroots service system needs to be strengthened.

In contrast, the market-oriented medical system in the United States has outstanding performance in technological innovation and service quality, but due to the high medical costs, some low-income groups have low medical accessibility. Even with the promotion of policy reforms such as the Affordable Care Act, the problem of medical insurance fairness has not been fundamentally alleviated.

In terms of economic impact, the medical industry, as an important part of the high-tech industry, has shown positive contributions to GDP in both countries, especially in the United States, where the development of the medical industry has significantly promoted technological innovation and employment growth. However, the high expenditure in the United States is putting increased pressure on the disposable income of residents' households, which affects consumption and social stability. Although China's overall expenditure level is relatively low, the sustainability of medical insurance funds has become a prominent issue in the context of aging.

In the future, the United States needs to strengthen supervision while maintaining innovation vitality to curb the excessive growth of medical expenses, while China needs to optimize the medical resource allocation mechanism, improve the capacity of primary medical services, and ensure the financial stability of the operation of medical insurance funds. Both countries should pay attention to the dynamic balance between efficiency and fairness in institutional reform to build a more inclusive and sustainable medical system.

This study theoretically analyzes the medical expenditure structure of China and the United States and its impact on economic growth from a macro perspective, but there are also certain limitations. First, due to the high complexity and policy diversity of the medical system itself, this study did not deeply explore the micro-effects of various specific medical policies at the implementation level.

Second, the study did not use empirical data modeling or econometric methods and could not quantitatively estimate the causal relationship between medical expenditure and economic growth. Future research may consider introducing panel data or national fiscal data to further verify the robustness of the conclusions through multivariate regression models.

In addition, the interaction between medical expenditure and economic growth is also affected by multiple factors such as cultural background, political system, and public financial system. Therefore, future research can expand to the scope of cross-national comparisons and absorb more practical experiences from different types of medical systems, thereby providing institutional reform paths that are worthy of reference for countries at different stages of development.

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