



# Analysis and Prospects for China to Avoid Middle-Income Trap

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**Abstract.** In 2021, China's GDP per capita was US\$12,358.797, making it a middle-income country. Whether China can cross the middle-income trap to become a developed country and sustainably contribute to the development of the world economy has become a hot topic of concern for economists around the world. By comparing the GDP per capita, unemployment rate, inflation rate and other socio-economic indicators of related countries and regions, this paper points out that China currently has social problems such as low level of national education, large gap between rich and poor, insufficient innovation capacity and insufficient level of development of advanced manufacturing industry. Finally, this paper gives suggestions and countermeasures on how to improve the national education level, narrow the gap between rich and poor, improve the innovation ability and develop the manufacturing industry.

**Keywords:** China's economy, Middle-income trap, Industrial transformation and upgrading, Economic policy

## 1 Introduction

### 1.1 Background

With a projected total GDP of \$17.7 trillion in 2021, China will overtake the United States as the second-largest economy in the world, behind only that country in terms

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of international exchange rates and first in terms of purchasing power parity. When comparing the top 20 economies in terms of economic output, the real GDP growth rate comes in first. In terms of international trade, the People's Republic of China now ranks first among exporters and second among importers of products. Based on current exchange rates, mainland China's GDP per capita increased over 35 times from US\$347 in 1990 to nearly US\$12,600 in 2021, making it the most economically developed developing nation in the world. GDP per capita in several eastern cities has already surpassed US\$20,000.

In China, poverty has decreased in tandem with economic expansion, and by the end of 2020, all 832 of the country's poorest counties will have achieved economic prosperity. On February 25, 2021, Chinese President Xi Jinping said that China's fight against poverty has won in all respects, with both general regional poverty and absolute poverty being eradicated.

China's contribution to the growth of the global economy is becoming more and more significant as its economy and global influence both continue to expand. Many nations and organisations view China as a prospective superpower and a vital pillar of the global economy. As a result, economists from all over the world have been debating how China, a middle-income nation, can escape the middle-income trap.

## **1.2 Related Research**

Based on the definition and causes of the middle-income trap identified by the empirical literature, Glawe and Wagner (2020) analyse the socioeconomic situation in China and predict and analyse that China has the potential to overtake developed nations and escape the middle-income trap with additional government-initiated reforms [1]. The current Chinese innovation system is found to be significantly changing by Liu et al. (2017) by comparing the prior and current innovation systems in China. They also note that a change in the development model necessitates additional government policy adjustments [2]. Woo (2012) analyses that China has attained middle-income status based on the Catch-Up Index, which defines the middle-income trap and identifies countries caught in it, and comes to the conclusion that China needs to adopt a new development strategy in order to maintain high growth rates and catch up with the developed world [3]. Wang et al. (2018) finds that China is now making great strides towards universal high school education, but it still needs to continue to improve the human capital level of its labour force and increase

the quantity and quality of schooling if it is to escape the middle-income trap. Wang et al. (2018) examines the proportion of the labour force with a high school education as well as recent trends in the number of 15–17 year olds with a high school education [4]. The middle class's income share has a somewhat regressive impact on the nation's economic growth, according to Ozturk (2016) regression analysis, which quantifies the relationship between the middle class and economic growth. He analyses empirical data to discuss the middle-income trap's probable origins and solutions [5]. Yiping et al. (2014) empirically examines, using data from 80 nations between 1980 and 2010, whether China should quicken financial reform in order to avoid sliding into the middle-income trap. The findings indicate that the government should continue to push trade and investment liberalisation as well as financial liberalisation as crucial components of its policy plan for avoiding the middle-income trap [6]. Glawe and Wagner (2016) outlines and summarises the various definitions of middle-income traps after reviewing the pertinent literature. He comes to the conclusion that while middle-income traps vary substantially between research, they all tend to perceive them as a slowdown in growth and a failed catch-up process. Furthermore, the majority of studies indicate that middle-income traps primarily affect countries in Asia and Latin America for durations greater than 50 years [7]. Zeng and Fang (2014) makes the case that China's reliant development can help it escape the poverty trap but not the middle-income trap based on ideas from world system theory. Furthermore, China's emphasis on low-end manufacturing sectors, which significantly rely on foreign markets, is a phenomena that hinders the development of associated Chinese industries' products and prevents them from transitioning to high-end manufacturing. To end the cycle, China should put more focus on the quality of its FDI rather than obsessing about its quantity [8]. On the basis of the distinction between a basic slowdown in economic growth and an improvement in the economy, Otsuka et al. (2017) suggests a new definition of a middle-income trap. According to the new concept, delayed infrastructure development may be consistent with governmental goals other than growth and need not always result in declining economic conditions. Additionally, a delay in enhancing R&D capacity would cause an acceleration of the economy's long-term growth [9]. Based on a number of factors typical of a middle-income trap, Lin and Wang (2020) creates a multisectoral general equilibrium model of structural change and industrial upgrading. According to the concept, the role of production services varies depending on a country's degree of development, and in order to avoid falling

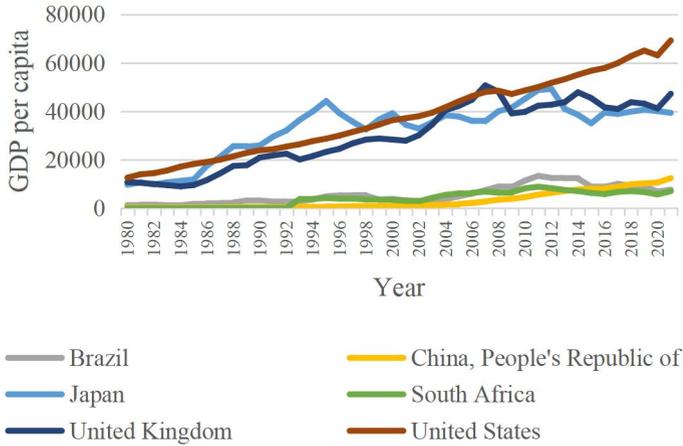
into the middle-income trap, the government should prevent premature de-industrialization and encourage advantageous industrial upgrading. Additionally, there is a need to increase production efficiency and remove entry barriers for production services [10].

### **1.3 Objective**

This paper will first analyze the GDP per capita, unemployment rate and inflation rate of the relevant countries over the past 40 years to compare the differences in the trends of specific economic data between China and other relevant countries. Then, the paper will discuss the current challenges to China's sustained economic growth in light of its current economic and social situation. Finally, the paper will provide solutions to overcome these challenges.

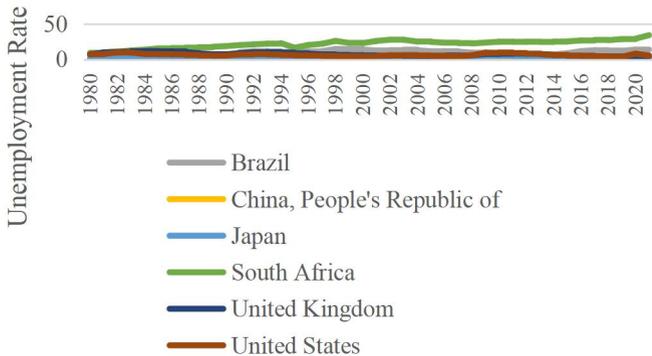
## **2 Current Status**

According to Figure 1, in terms of GDP per capita, the six countries or regions, China, the United States, Japan, Britain, Brazil, and South Africa, can be divided into three parts. The GDP per capita of the U.S. has been growing steadily, and was often surpassed by Japan or the U.K. before 2008, but after 2008, the U.S. led several countries in terms of GDP per capita, and in 2021 the U.S. GDP is 1.4 times that of the second-place country. GDP per capita growth in the United Kingdom and Japan has fluctuated significantly over the past 40 years and surpassed the U.S. for the time being until 2008, after which both countries settled into the second tier and gradually pulled away from the U.S. China, South Africa and Brazil have similar GDP per capita curves, and while their growth rates vary significantly compared to the other three countries, their overall GDP per capita curves are flat and at a lower level due to their smaller bases, with China, South Africa and Brazil all having GDP per capita in the mid-\$10,000s in 2021.



**Fig. 1.** GDP per capita per capita current prices (U.S. dollars per capita)

In terms of unemployment rates, as shown in Figure 2, China and Japan share a similar performance, with relatively stable changes in unemployment rates over the last four decades and the ability of both countries to maintain low unemployment rates throughout. The U.S. and the U.K. also show a similar pattern over the last forty years in that they both show cyclical changes in unemployment rates and a high degree of variation, in addition, their unemployment rates have remained below 10% since 1993. South Africa and Brazil, two of the countries with the highest unemployment rates, are also growing apart, with South Africa's unemployment rate already approaching 35% in 2021, while Brazil's is close to 15%.



**Fig. 2.** Unemployment rate (Percent)

According to Figure 3, China's inflation rate showed significant changes during the 20th century, reaching a peak of 24.1% in 2004, but has remained stable in the range of 0-6% since the 21st century. The U.S., U.K. and Japan show a highly similar pattern, with inflation rates remaining stable in the 0-5% range after 2000, similar to China. Inflation in South Africa and Brazil has been more variable, with Brazil's inflation rate in 1994 being 2075.8%, which was much higher than the combined inflation rates of the other countries in that year.

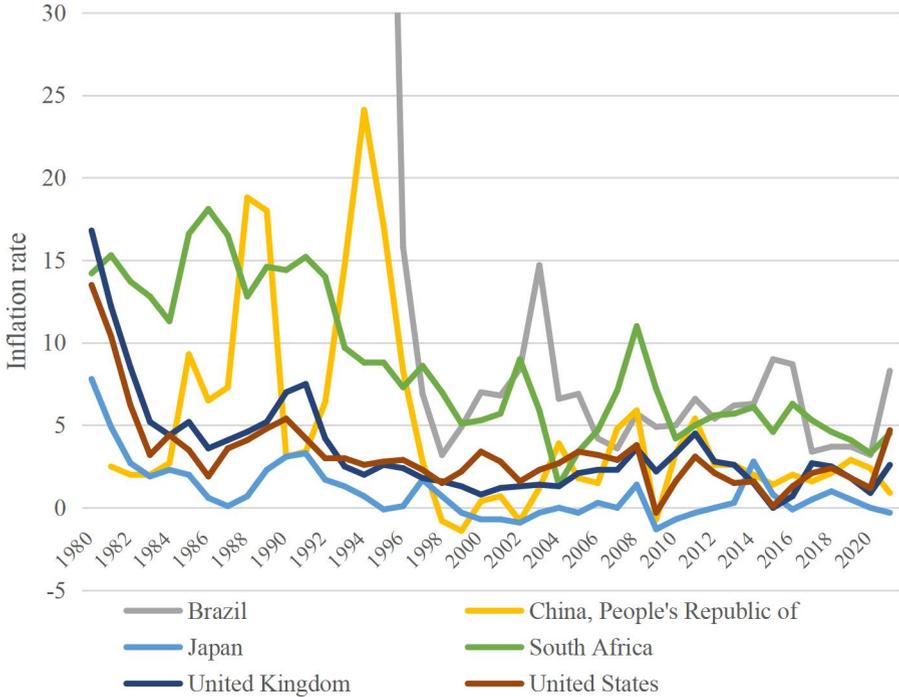


Fig. 3. Inflation rate, average consumer prices (Annual percent change)

### 3 Problem

According to the International Monetary Fund, China's GDP per capita in 2021 is US\$12,358.797. According to the World Bank's definition of a middle-income country with an annual per capita income of US\$1,045-12,696, China is now a middle-income country. Before China can develop into a developed country, it needs

to first cross the middle-income trap. In fact, since the end of World War II, only about a dozen countries and regions have managed to change from middle-income to high-income countries.

The essence of crossing the middle-income trap is whether the economy can achieve sustained and stable growth. If a country can achieve sustained and stable economic growth, it will definitely cross the middle-income trap, and if not, it will definitely fall into the middle-income trap. By comparing the economic and social characteristics of the two types of countries and regions that successfully crossed and fell into the middle-income trap, it is easy to find that China has the following socio-economic problems in the process of crossing the middle-income trap.

### **3.1 Lower National Educational Attainment**

In 2020, the Chinese government conducted the seventh national census, according to the data of the seventh national census, the number of people who have received or are receiving higher education in China is 15,088 per 100,000 people, which means that the higher education penetration rate in China is about 15%, compared with developed countries, Japan, the United States and the United Kingdom, this figure is 45%, 42% and 38%, respectively. It can be seen that the figures of these countries are 2.5 to 3 times higher than those of China.

The academic community has conducted a lot of theoretical and empirical studies in the past two decades, and the findings show that education plays a crucial role in crossing the middle-income trap, and that higher education plays a more important role than basic education in the development of economies from middle-income to high-income, and that a good higher education system provides talent support for developed economies, and that a good higher education system produces A good higher education system produces many talented people and attracts talented people from all over the world to work for it.

### **3.2 Large Gap between Rich and Poor in Society**

The polarization of the rich and the poor will cause a large number of social problems. In reality, the great difference in consumption levels of different people will cause a great psychological impact on people, resulting in a general psychological imbalance in society, and thus breeding a variety of social problems,

such as corruption in the civil service, various types of criminal problems, people's increasing hatred of officials and the rich, the widespread spread of social impatience, etc. A large number of social problems have seriously interfered with the normal operation of society and hindered the normal development of economy and society, making the government have to invest more money and energy to solve these problems.

### **3.3 Insufficient Innovation Capacity**

One of the fundamental reasons why some economies fall into the middle-income trap is that developed countries have a comparative advantage in technology-intensive industries due to their stronger innovation capabilities and higher technology levels, while countries with lower levels of development have a comparative advantage in labor-intensive industries due to low labor costs, while middle-income countries have neither comparative advantage and are unable to gain an advantage in international competition.

One of the problems China is facing now is that there is still a gap between its science and technology level and that of developed countries. The relevant innovation indicators of China are far from the requirements of an innovative country. around 40%-50% in developed countries.

### **3.4 The Level of Development of Advanced Manufacturing is Seriously Insufficient**

Advanced manufacturing is an advanced stage of industrialization development relative to low-end manufacturing, which is characterized by high technological content, high added value, low pollution, low emissions and strong competitive advantages. Most of the traditional manufacturing industries are labor-intensive and capital-intensive, while the advanced manufacturing industry relies on the competitive advantages of high-tech and advanced equipment.

At present, China has reached the middle-income stage, and with the increase of income level, the labor cost in China is gradually increasing and the price of land is rising, which makes the international capital in China can't get as high profit as before, so the international capital is moving the related traditional manufacturing

industries to the Southeast Asia region where the labor cost is lower, and Vietnam is the most obvious example.

It can be found that all countries or economies that do not enter the high-income bracket but are caught in the middle-income trap are suffering from negative economic growth or stagnation and growing unemployment and other social problems due to the failure to develop advanced manufacturing and the overall decline of traditional industries. This is the structural trap that exists in the industrial system of middle-income countries or economies. History has shown that only by getting out of this trap can middle-income countries or economies enter high-income status and enter the ranks of developed countries or economies.

## **4 Solution**

As to how to cross the middle-income trap, the developed countries in Europe and America and the developed countries in East Asia have obviously different paths. From the perspective of the developed countries in Europe and America, although they have similar problems to China in their development process, they have gone through this stage relatively calmly, while the developed countries in East Asia are using their latecomer advantages to achieve rapid development beyond.

China possesses a unique social system and national conditions, and in recent years, the Chinese government has continuously emphasized the realization of the great rejuvenation of the Chinese nation. From the perspective of conditions, the Chinese will to rejuvenate, the new growth dynamics already in place and the opportunities of the times show that it is possible for China to cross the middle-income trap, however, China still needs to do the following to achieve this goal.

### **4.1 Raising the Level of National Education**

If it is to cross the middle-income trap, China first needs to achieve the level of education. The first is the continued availability of compulsory education. China currently implements a nine-year compulsory education policy, and as a next step, China should include the high school level in compulsory education. Second, China should improve the quality of education, especially the quality and balance of compulsory education, especially the quality of compulsory education in rural areas.

Finally, it is necessary to promote the classification and management of higher education. Currently, there is a shortage of application-skilled personnel in China, and people are generally reluctant to choose vocational education, so the Chinese government should vigorously develop vocational education to cultivate vocational-skilled personnel needed for economic and social development.

#### **4.2 Narrowing the Gap between the Rich and the Poor in Society**

Controlling and narrowing the gap between rich and poor is important for China to cross the middle-income trap. To narrow the gap between rich and poor in society, the Chinese government first needs to narrow the income gap between urban and rural residents. Secondly, the income gap between regions should also be controlled, and China should continue its coordinated regional development strategy to narrow the regional development gap. Third, the income gap between different groups should be reduced. Finally, the Chinese government should proceed to optimize basic public services, promote social equity and justice, and improve the social and economic development environment.

#### **4.3 Improving Innovation Capacity**

Crossing the middle-income trap requires China to improve its innovation capacity. To enhance its science and technology innovation capacity, China first needs to increase its R&D investment, encourage enterprises to invest more in R&D by establishing an incentive mechanism for innovation investment by the government, and guide financial capital and private capital into the innovation field. Secondly, China needs to build infrastructure such as laboratories, research centers and innovation centers at all levels to provide facilities for technological innovation. Finally, the government must strengthen the innovation subject position of enterprises, enterprises as the most understanding of market demand technology direction of the subject, the government should introduce relevant policies to help optimize the innovation environment of enterprises.

#### **4.4 Development of Advanced Manufacturing**

Manufacturing is the foundation of economic prosperity, and for China, the status quo of a large but not strong manufacturing sector has become a major challenge to

China's economic growth. Therefore, to cross the middle-income trap, it is necessary to transform and upgrade the industry.

In order to reach the goal of industrial transformation and upgrading, the Chinese government must make continuous efforts in policy. The first is to continue to deepen the supply-side structural reform, which will help China optimize the industrial structure and improve the quality of industry. Secondly, the government should formulate relevant policies to accelerate the withdrawal of backward production capacity, so that enterprises whose energy consumption, environmental protection, safety and technology do not meet the standards or produce eliminated products can be shut down and withdrawn in accordance with the law. In addition, the central bank should introduce relevant policies to broaden the financing channels of advanced manufacturing industries to ensure the capital needs of relevant enterprises. Finally, the local governments should also introduce support policies, through the establishment of special funds, the implementation of talent subsidies, land concessions, tax exemptions and other ways to high-end manufacturing enterprises to implement targeted support.

## **5 Conclusion**

Based on an analysis of economic and social data and facts over the past 40 years, the essential reason for the decline in China's economic development in the last two years and China's move into the middle-income trap is the lack of high-end manufacturing in China. High-end manufacturing, including semiconductors, industrial robots and automobiles, brings high added value to developed countries, which in turn allows their governments to sustainably improve education levels, implement transfer payments to narrow the gap between rich and poor, and promote technological innovation. While these initiatives have ensured the competitive advantage of developed countries in international markets, the absence of these initiatives is the biggest problem that China is currently facing. This paper argues that in order to cross the middle-income trap, the Chinese government should improve the quality of education, continue to implement a coordinated development strategy while optimizing basic public services, establish a sound infrastructure conducive to technological innovation, and develop relevant policies to achieve industrial upgrading.

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