

How Can China Escape the Middle-Income Trap?

Siqi Chen^{1,a,*}

¹Nanjing Foreign Language School, Nanjing, 210008, China

a. csq13655180841@outlook.com

*corresponding author

Abstract: As one of the most widely discussed terms in recent decades, the “middle-income trap” refers to a dilemma in which middle-income economies struggle to achieve high-income status. After becoming an upper middle-income country in 2010, China has been stuck in the middle, facing the problem of economic stagnation. This research focuses on the steps taken by the countries that have successfully escaped the middle-income trap and figures out how those actions can shed light on the policy-making in China. The conclusion drawn from the work is that the Chinese government should present a co-creation and pro-industry attitude towards private sectors for industrial upgrading and developing vocational education, enhancing the connection between schools and enterprises in providing courses and pipelining talents. This work points out the policies China can work on to escape the middle-income trap by adjusting the relationship between the government and enterprises and transforming its rich population resources into a reliable reserve of highly qualified labor forces.

Keywords: The middle-income trap, Chinese economy, industrialization, private sector, education system

1. Introduction

In recent decades, analyses of worldwide economic growth have emphasized the existence of the middle-income trap. The middle-income trap occurs when middle-income economies stagnate before achieving high-income status, facing frictions as they move up the value chain. Middle-income nations may lose their comparative advantage of low labor costs and suffer from a lack of industrial upgrading, sandwiched passively between low and high-income countries. In demonstrating how to escape the middle-income trap, it is widely discussed what China can do to adjust the macro industrial structure and attract talent; however, it has long been ignored that the dynamic relationship between the government and private companies and the process of cultivating domestic talents can play significant roles in boosting economic growth.

This article seeks to analyze the main strategy of moving up the value chain through industrial upgrading for China. In this work, relevant advice on policy-making in two crucial aspects is provided: i) the government’s co-creation and pro-industry role in the technological industry, and ii) the improvement in the education system.

2. China's dilemma in the middle-income trap

2.1. Characteristics of countries caught in the middle-income trap

Distinguished from income group classification, the middle-income trap illustrates a problem of economic stagnation. Assessing whether a country gets trapped requires analyses of dynamic income transitions and the progress speed in the middle-income groups. As economists Felipe et al. have demonstrated, the middle-income trap does not have an exact definition but rather a working methodology regularly modified based on the comparative development of countries worldwide [1].

Countries caught in the trap all face friction as they move up the value chain. However, different characteristics occur in each period. During the transition from labor-intensive manufacturing and exports to technology-intensive industries, “stuck countries” may lack pluralistic industrial structures during the industrialization process due to a low share of investment, insufficient R&D capacity, and an underdeveloped higher education system. Economies that are at a lower stage of industrialization may suffer from the “price taker” position—overdependence on agriculture and energy exports and slow growth of manufacturing; others that have reached late industrialization should look to sustainable development in the transition to tertiary industry and regulations to stabilize labor productivity.

2.2. Possible route for China

As the largest economy in the middle-income group, China's position in the trap is worth noticing. Since the economic reform 1978, China has experienced appreciable economic growth [2]. After transforming into an upper middle-income country in 2010, however, China's growth has slowed. According to World Bank Data, China has experienced an apparent decrease in the annual percentage growth rate of GDP from 10.6 percent to 3 percent from 2010 to 2022 [3]. In the face of economic stagnation, growth by a large margin will only be driven by the transformation from labor-intensive manufacturing to technology-intensive industries. Facing the middle-income trap, China should solve an imperative issue of reforming the industrial structure and concurrent policies.

As China transforms from agriculture towards industrialization, its development pattern has resonated with Sir Arthur Lewis' model. Featuring a massive population, China experienced extensive economic growth due to its large pool of surplus rural labor in the last few decades [4]. Based on the prediction that the demographic dividend is disappearing, it has been discussed whether China is approaching the Lewis Turning Point. Using Lewis' model, the IMF anticipated that the Lewis Turning Point might “emerge between 2020 and 2025” in China [4]. Since the rough, labor-intensive growth pattern would eventually collapse, China needs a dominant thrust of productivity improvements through innovation and R&D capacity [5].

3. Lessons from other countries and policy advice for China

The term “middle-income trap” debuted in a 2007 World Bank report [6], while economies that escaped the trap in recent decades succeeded intensively during the late 20th century. The methodology used in this section is posterior analytics, through which typical cases of economies and their actions are analyzed. These interpretations can shed light on the strategies for China.

3.1. Government in Technological Industry: Co-Creation and Pro-Industry

Regarding industrialization, the two main roles within an economy are the government and enterprises. Enterprises include two parts: the public sector and the private sector. Running as both a market-shaping and a market-fixing instrument, the government helps boost the development of

enterprises dynamically. Compared with public sectors, private sectors are crucial drives of economic growth, creating large quantities of jobs and investing more in R&D and innovation. South Korea, an impressive economy famous for its rapid upgrading from the middle-income trap, has exploited the private sector's role as the driving force of its industrialization. Since the 1970s, the government has provided cooperative platforms for private sectors by creating R&D institutes such as the South Korea Institute of Machinery and Metals [7]. Government assistance and the private sector's leading role in R&D eventually make South Korea competitive in high-tech products like semiconductors and phones [7].

The experience of South Korea illuminates that, to foster industrial progress, the government should adopt pro-industry policies and provide a co-creation platform for private sectors to exert their vigor. For the Chinese mixed economy, however, the government works more like a manipulator than a supporter. Public sectors are still in the dominant position in industrialization, while private sectors do not receive much assistance as equivalent as their contributions to economic growth and technological development.

China should open markets to a greater extent and ensure a market environment for fair competition. Currently, China's oil, electricity, communications, finance, and other markets are completely monopolized by state-owned enterprises. They lack competition, resulting in high costs, low efficiency, and deficient innovation. For example, in terms of finance, the five major banks are all directly controlled by the central government. Others are local commercial banks affiliated to provincial or municipal governments. Few foreign banks have gained market access. Moreover, since those products or services are indispensable factors of other industries, state-owned enterprises use their monopoly to control pricing power and obtain excess profits. This essentially plunders other industries, raising production costs and compressing their operating benefits. Since private sectors contribute as a dynamic drive to economic growth and are more flexible in innovation, China should open markets to private sectors more. To achieve this, the government can i) revise laws and establish market access mechanisms, ii) amend the anti-monopoly law, prohibiting first-entrants (state-owned monopoly enterprises) from using malicious means to retain comparative advantages, and iii) encourage private sectors to participate in the investment of newly opened markets.

On the other hand, the Chinese government can amend and improve relevant laws to create a legal system in which citizens' legitimate property cannot be violated, thus creating a safe and equal space for market competition. Although the ruling principle of China has fluctuated over the past few decades, the essence of the emphasis on public ownership has not changed. Arbitrary deprivation of private property is a chronic disease of the system, preventing more profit. The goal of the private sector is to pursue profits; the profits realized by the private sector through legal means should eventually become private property with legality. Laborers are the most active factors, while entrepreneurs are the most active factors among laborers. If their private properties are deprived arbitrarily, it is difficult to encourage small sectors or individuals to start a business investment. In the long run, the micro stagnation would become a big-scale trouble of stifling enterprise and initiative. To be more specific, there are several possible steps: i) improving the existing relevant law of property rights to make sure that the judiciary shall not deprive the traceable legal distribution of property for any reason during the law enforcement process; ii) an open and transparent trial and supervision mechanism should be formed for litigation concerning citizens' property rights; iii) a fair and reciprocal bargaining mechanism should be established under the circumstances when the government needs to expropriate citizens' property due to urban construction or other reasons.

3.2. Extensive Education System

The Schumpeterian Approach—which emphasizes entrepreneurial innovations—stands prevalent as a micro perception of economic growth. To foster technological innovation, a guarantee of an educated

labor force is necessary, which calls for a well-developed education system as a foundation [8]. Education can enhance the subjective dynamic role of human capital, thereby promoting sustainable economic growth. Japan, a rich country now known for its high-tech industry, presents thought-provoking educational improvements during its development. Japan has implemented compulsory primary education since the 1860s [9]. In 1946, the Japanese government provided a counterpart to a U.S. Education Mission, working on education reconstruction with American educators [10]. The post-war Japanese education system has created production hands equipped with basic science knowledge and hands-on skills, prepared for industrial development [11]. On the other hand, Thailand, which is still stuck in the middle-income trap, also provides thought-provoking lessons on educational reforming. In the late 19th century, Thailand focused on training manpower for government officials, with a school enrollment ratio of 0.1% in 1890 [12]. Although learning from Europe, with a national emphasis on agriculture and exploitation of empty land, Thailand did not put much effort into popularizing education until 1921, almost 50 years later than Japan [12]. This time lag, resulting from Thailand's slow successive transformation, did not mean Thailand's failure in education. Still, the scarcity of a competitive labor force delayed its transformation towards the high-tech industry.

The lesson China can learn from Japan and Thailand is the importance of promoting education as a preparation for further national development and that education's role in contemporary orientation is to provide human capital with strong hands-on skills and R&D capabilities. Nevertheless, the crucial problem in Chinese education is the non-equivalent relationship between "high diploma" and "high ability." Policies for the expansion of college education admission were intended to supplement the educated labor force. As more students pursue the diploma rather than learning skills, however, graduated students face homogenization in their abilities and lack innovative mindsets. Moreover, according to the Guancha Syndicate, China's labor productivity level is only 40% of the world average, equivalent to 7.4% of the United States. This shows the inferior overall quality and skill level of industrial workers, which is rooted in the incomplete vocational education in China.

In solving these problems, China should implement policies on education streaming and strengthen the vocational education system, cultivating technical workers, engineers, or other specialized talents that meet the needs of industrial development. This path is aimed to avoid the vicious competition situation towards the National College Entrance Examination, an "arms race" that all families revolve around. Moreover, educational resources can be prevented from being wasted; after all, the investment in education from the middle school stage wastes resources for those who do not delve deeper into college. Thirdly, a complete vocational education system can provide an effective supply of human resources demands at different levels—blue-collar, white-collar, and gold-collar workers, for example—in the country. Specifically, the government should link vocational education institutions with leading enterprises or guilds to ensure a seamless connection between students' job hunting and the recruitment of vocational employees. Meanwhile, it is crucial to strengthen the inspirational courses in vocational education and encourage professionalized, high-skilled talents to participate in high-tech R&D. To elaborate on specific steps, take the automotive industry as an example. The government promotes car companies to provide faculty resources (senior technicians, managers) and a practice base. Vocational education institutes i) enroll students by the standards of car company workers, filtering potential talents for later recruitment, ii) design core courses based on the overall industry chain and extend heuristic guidance, and iii) ensure teaching quality and that students meet the needs of enterprises. Besides applying policies on enterprises and educational institutes, the government should reform the distribution mechanism, tilting vocational education and industrial workers, to weaken discrimination and mobilize public enthusiasm. Specific practices include i) increasing the proportion of vocational education transfer in national education funds and ii) reducing or discounting the personal income tax of high-skilled blue-collar talents.

Furthermore, it is important to adjust the assessment mechanism for schools and students. Enrollment rates for schools and scores for students are indicators that are relatively convenient to quantify. However, due to the characteristics of education itself, its final effect should not be evaluated in the short term, but should instead be enlarged to a longer period. The disadvantages of the previous assessment pattern is relatively explicit, resulting in too much emphasis on the diploma rather than hands-on abilities. Regarding specialized vocational education, several possible questions can be considered suitable within the assessment mechanism: how many skilled workers have been provided by this vocational school to a certain industry in the last decades? How much value have these industrial workers created? How many people have made better progress and become professionals in the industry after graduating from vocational school? Similarly, when considering comprehensive elite education, it is crucial to tally the specific number of academic achievements and invention patents that have been contributed by those talents rather than simply the exam scores or written papers. Changing the assessment mechanism over a longer period of time is a guide that can change the utilitarian nature of the education industry. All departments would no longer use rigid, short-sighted numbers and scores as the standard but would transfer their educational principle to the long-term cultivation and nourishment of students' abilities. The reduction of the exam pressure would also encourage students to focus on the improvement of their own comprehensive abilities and their families to pay more attention to the growth of their children.

4. Conclusion

This article elaborates on China's economic growth and presents feasible policy practices to escape the middle-income trap. During the transition from labor-intensive manufacturing to technology-intensive industries, developing value-added technological industries works directly on economic growth. Under this principle, private sectors and high-skilled human capital are two crucial factors that promote innovation and pluralistic development. To fulfill the dynamic role of the private sector, the government should adopt a co-creation and pro-industry attitude and work on policies of amending anti-monopoly laws, gaining market access for individual enterprises, and fully protecting their private property. To improve the education system, the government should develop vocational education and foster more highly skilled talents in different industries rather than students with high marks or diplomas but low competence, preparing competitive and creative potential employees for enterprises. Facing the inferior status of vocational education, the government can increase transfer payments or discount personal income tax of high-skilled blue-collar workers to mobilize public enthusiasm. Moreover, the government should work on adjusting the assessment mechanism for compulsory, vocational, and higher education, embrace the essence of cultivating comprehensive talents rather than testing machines, and create a competitive but positive educational atmosphere inside and outside school.

The analysis contributes to two possible paths the Chinese government can work on to escape the middle-income trap. However, due to its unique characteristics and political regime, China urgently calls for more "personalized" research. Further research works should elaborate more on the vertical developing route of China and the detailed degree of government control.

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