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## Article

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# The coming fallout following China's "condensed development model" of economic growth and the transformation of China's mode of economic growth

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## Abstract

Starting from the comparisons of international industrialization history, we suggested that the successful successor economic entities have experienced significant economic fallouts when GDP per capita reached US\$11,000 after rapid economic growth resulting from the condensed development. By learning from the international empirical evidence and by analyzing China's potential for growth, we suggested that China will enter slow growth stage around year 2015. Therefore, the current development mode has to change in terms of growth structure and economic system.

**Keywords:** Condensed development; Stages of growth; Transformation of growth

China's economy has grown rapidly for more than 30 years, but how much longer can it last? China is fortunate to have sustained such rapid economic growth over such a long period, but it does not take a genius to realize that it will not last forever. The only questions are when will it end, what form will the economy assume when it ends, and what will the repercussions be? Yet, another concern is whether China will become stuck in the middle-income trap. When China's GDP per capita reaches US\$4000, the middle-income trap will be upon us.

## Two long-term tasks

Economic growth has been a hot topic among academics. With the onset of globalization, the growth of China's real economy has become of major importance to the global economy. Research on this topic must be based on international comparisons. In the beginning of our research, we had two far-reaching tasks to accomplish. One was building an economic indicator database for dozens of industrialized countries and regions. These data came from different sources, and as such, we had to organize our research systematically. This was a time consuming and complex task, and our group dedicated much effort to this project. The database made our research much easier to conduct. Within the database, regularities and typical phenomena became observable. This database should prove useful to future research as well.

Choosing the most appropriate benchmark from various international indicators was another task. For instance, we had to decide whether to use current US\$ accounting or

purchasing power parity for calculations. Determining the specific accounting method for the latter was yet another issue. After serious contemplation, we adopted Angus Maddison's long-term economic growth indicator at 1990 prices as our benchmark. Not only is this a universally recognized indicator, but the wide range and time scope of this method allowed us to compare data across national boundaries and time periods. Also, this method handles important physical output indicators better than other indicators.

### **Discoveries about the “condensed development model” of economic growth**

We began our analysis with research on the industrialization process and on empirical evidence. We classified the industrialized countries and regions in the database into the following five categories: (1) leading nations in technological advances, such as the UK and the USA; (2) technologically advanced countries such as European nations; (3) East Asian countries which have grown rapidly and are trying to spur innovations; (4) nations which employed an export substitution strategy but got stuck in the middle-income trap, such as Latin American nations and some Southeast Asian nations; and (5) nations employing a central planned economy which experienced rapid growth for a long time but which eventually fell into the middle-income trap, such as former Soviet Union countries or Eastern European countries. In all of these nations, at different times, there have been forerunners and followers, newcomers, and failures.

In our research of international comparisons, we made what we call several “typical observances”. Here, we use the term “typical” instead of “regular” because these observances popped up frequently within our research, but we are still not sure of the exact underlying reasons. The term “typical observances” much better describes the findings of our research.

First, we observed the fallout that occurs after rapid “condensed development model” economic growth. Compared to leader countries, follower countries generally industrialize over a much shorter time period. The later the country begins, the shorter the time period it uses to industrialize. For example, it took Japan only about 70 years to industrialize to the same level as the UK and the USA, both of which spent hundreds of years in the process. South Korea and other East Asian nations took only 50 years. China and some more developed inland regions may require an even shorter time. We adopted the term “condensed development model” growth to describe this phenomenon. The rate of economic growth seems to be higher during “the condensed development”, but once the economy can be condensed no longer, the bottom falls out of the growth rate. In the past, economic growth theories were mostly concerned with the occurrence of rapid growth. Now, we need not only to address the ensuing economic fallout, but we must also fully dissect the process of rapid economic growth during “the condensed development”.

Second, we observed two different types of fallout that occur after the industrialization process. In one, the economy falls out and becomes stuck in the middle-income trap. Latin American countries are the typical example. In former Soviet and Eastern Bloc nations, economic growth dropped out dramatically after the mid 1970s. This is considered a different kind of middle-income trap. The latter middle-income trap, however, has not been mentioned much in economic research. Interestingly, this kind of fallout first appeared during the Soviet Union era of strong central economic planning. This demonstrates that no matter how solid a country's institutions seem, when they fail, the economy is bound to experience fallout. A different type of fallout occurred in successful successor nations such

as Germany, Japan, South Korea, and other new East Asian economies. These economies started to fall off after they had fully realized their potential of rapid growth. To a certain extent, this kind of fallout presages an economy's transition from a period of rapid growth into a period of medium growth and high income.

In straight forward terms, these two types of fallout share some traits, including a period of rapid growth before fallout. What matters is their intrinsic differences. For the middle-income trap group, GDP per capita at the time of the fallout for Latin American countries was around 4000 to 6000 international dollars and around 5000 to 7000 international dollars for former Soviet Union countries. The economies of successful successor countries fell out with GDP per capita near 11,000 international dollars. The former group lost the control of their economies during the period of rapid economic growth. The latter group, however, experienced fallout after they had fully exploited their economic growth capacities. What is more important is that both Latin American and former Soviet nations had intrinsic flaws in their institutions, policies, and economic strategies at the time they entered the middle-income trap. These flaws effectively predetermined the falling out of their economic growth. As for the successful successors, those nations avoided institutional flaws on their roads to industrialization. In our study, we built a model based on "six factors" to explore possible explanations for these observations.

One issue to be explored is the relationship between external factors and decelerating economic growth. Empirical evidence demonstrates that some nations' economies decelerated as a result of significant external factors. In Latin America, economic stagnation was accompanied by the 1980s debt crisis. Japan's economy slowed down at the time of the oil crisis and the breakdown of the Breton Woods system during the 1970s. South Korea's economy slowed down in the face of the Asian financial crisis in the late 1990s. The question then is: without significant external impacts, would those countries have experienced their fallout? Or more to the point, were their fallouts the result of external or internal factors? We previously thought that deceleration was mainly caused by internal factors and that external factors exerted only an amplifying effect. The debt crisis in Latin American nations was mainly caused by institutional and structural deficiencies, while former Soviet Union nations appeared generally unaffected by debt crises as a result of strong, centrally planned economies. Successful successor countries like Japan and South Korea were both affected by the 1970s oil crisis and both relied heavily on imported energy. Japan's economy began to slide immediately, whereas the South Korean economy took another 20 years to show signs of slowing. The underlying reason for this is that Japan's rapid economic growth period ended in the early 1970s, while South Korea's ended in the mid 1990s.

Third, the deceleration of the economies of successful successor countries was accompanied by massive adjustments to their economic structures. During rapid growth periods, those nations were typically ramping up industrialization, which at the time was the prime driver of growth. During the middle and later periods, heavy industry developed even faster, and the heavy and chemical industries together drove economic growth. Massive resources were invested into roundabout production. The agricultural sector accounted for smaller and smaller proportions of economic growth, while the service industry started to grow but was not yet the leading driver of growth. Within this economic structure, investments were kept high to support demand, while demand for consumption was kept at a lower level. When rapid growth was near ending, the economic structures also changed

dramatically. Industry's proportion within the economy decreased, and was replaced by the service sector, which then became the main driver of growth. Then, investments decreased and consumption increased. During the transformation, however, it was not that the service sector grew more efficient than the industrial sector, but rather that the slowing down of industrial growth made the growth of the service industry seem faster in comparison. Investment and consumption also switched places, in relative terms, at the end of the transformation.

Fourth, as economic growth slows, and growth drivers are replaced, the issue we need to face is how to transform our economic growth model. Deceleration is the result of dramatic changes occurring within the structure of the economy and is just one face of the sweeping changes happening now. Outside of the economic structure, there are great changes happening within supply and demand. With demand becoming sluggish, the costs of factor inputs such as labor, land, and resources are rising fast. Direct use of technology has become scarce, and the older segments of the population have low savings rates. These all lead to one question: can we keep productivity at a reasonable level? It would seem that the existing growth mode is no longer capable of adapting to our changing economic structure and changing factor inputs. Even for successful nations, transforming the mode of economic growth is never smooth. The transformation requires thorough adjustments to institutions, strategies, and policies, and the process has never been easy. Japan, for example, implemented macro-expansionary policies in an effort to restore economic growth rates to previous levels, but that ended in failure, with a huge asset bubble and soaring national debt. Nevertheless, these nations have gradually transitioned to innovation-driven growth modes, fostering a number of high quality industries and enterprises to compete in the global market.

### **Time windows for China's slowing economy**

Using the typical observations discussed above as our foundation, we will now discuss the course of Chinese industrialization and its economic growth in terms of China's historical background.

China has experienced a growth rate of 10 percent over the past 30 years, making China a typical case of the "condensed development model" of growth. Research on China's impending economic fallout should take into consideration every aspect of China's economic growth mode. We have adopted three different but mutually verifiable calculation methods and have concluded that China's economy may enter a fallout period in 2015 or somewhere within the time window from 2013 to 2017. When the fallout occurs, economic growth may fall by as much as 30 percent, from 10 to 7 percent.

An important task we face is estimating China's GDP per capita, or in other words, to see where we are economically. Recent studies on the middle-income trap usually suggest that Latin American nations fell into the middle-income trap after their GDP per capita reached US\$4000. Now, China's per capita GDP is at that very level, and so it would seem that our country is also in the trap. We reckon that this logic is straightforward but misleading. As stated above, we have adopted credible indicators using international dollars suggested by Angus Maddison and have compared different methods for deriving accurate comparisons across nations and time. We have concluded that China's GDP per capita is nearly 8000 international dollars, much higher than that of Latin American nations.

Different measurements of GDP per capita would result in different definitions of the problem.

Another question is how to apply international experience to the enormous Chinese economy. China's population is greater than the combined populations of all OECD member countries. According to the latest demographic statistics, the populations of 27 provinces (including provincial-level municipalities and autonomous regions) out of 31 exceed 10 million, with the top ten over 50 million, and the top three near or over a 100 million. Many of the world's large economies are similar to one of China's provinces in term of population size. And as China's various regions have developed at very different paces, China could be considered a whole world unto itself. To make Chinese data comparable with the international statistics, we have classified our provincial-level districts into several categories. For instance, big cities like Beijing and Shanghai are equivalent to city-state economic entities such as Singapore and Hong Kong. Those provinces with better economic conditions and large populations are similar to Japan and South Korea. The rest of the provinces with poorer economic conditions are similar to less developed countries. Overall statistics from each province can then be organized into a comprehensive whole for analyzing the overall national economy.

Frankly speaking, predicting future economic prospects has always been a dirty job. We can only hope that China will maintain a growth rate around 10 percent for thirty more years, or even longer. However, we must admit that fallout is inevitable after a condensed development model economy such as our own reaches a certain threshold. It is, however, never enough to simply point out future trends. What we must do is to use thorough analysis to predict the fallout's time window. In fact, all we can do is to estimate the time window, which we place in approximately 2015 or from 2013 to 2017. It is probable that the fallout will occur during that window, but no matter when the fallout comes, it will not be unexpected. After 30 years of rapid economic growth, however, this window of 4 years should be far from a rough guess.

### **Understanding adjustments to the economic structure from the perspective of the stage of development**

What is more important is that through research of the economic fallouts in the late period of condensed development model, we are able to deepen our understanding of the structure of our economy and its prospects for adjustment and development.

The structures of industry, investments, and consumption are often the main topics when discussing the economic structure. In the condensed development model of growth, the high ratio occupied by the industrial sector within the economic structure and the high ratio of investment to consumption are closely related to rapid economic growth at the macro-economic level. An analysis of China's growth data over the past few years demonstrates that it was consumption, not net exports, that grew steadily. It was the ratio of investment that drove growth, and that ratio was closely related to the ratio of the industrial structure within the economy. Due to institutional factors, there were indeed problematically high ratios of both industry and investments within economic growth, but it is not easy to distinguish between "a high ratio" and "a high but normal ratio". When condensed development model growth ends and economic growth slows, the proportion of industries and investments in economic growth gradually decline. At the same time, the proportion of the service sector and consumptions both rises. It is worth mentioning that

this structural adjustment stems from slower industrial growth and investment growth, not from the increasing proportion of the service sector and consumption within the economy. Therefore, the growth of the economy as a whole is declining. When rapid growth persists, manipulating the proportions of investments and the industrial sector growth in order to improve the economic structure results in neither a rational economic structure nor increased benefits. Instead, growth slows down, and companies' profitability and financial conditions worsen. It is worth noting that China has this in common with Latin American nations now stuck in the middle-income trap. However, when rapid growth cools off, the economic structure will naturally change on its own.

There is another question we must address: how should we position China's industries in the future, especially in the manufacturing sector? We think that we should learn lessons from developed countries which overdid de-industrialization, thereby hollowing out their industrial structures. Even if China's manufacturing sector declines in the future, we should try to prevent the decline from being too dramatic, and keep its ratio at around 30 percent. In order to stimulate production, increase efficiency, and upgrade our industries, we should focus on productive services such as R&D, finance, logistics, training, information services, and post-sale service when developing the service industry. There is one more issue China needs to tackle into for the nation to have competitive advantages in every sector, but rather only in some sectors. It will be much more important for China to cultivate her competitiveness, and after that, the period of rapid economic expansion is over. However, it is the market that determines which industries stay. In the foreseeable future, it might be the manufacturing sector, and not the service sector, that is competitive. Therefore, China needs a strong and competitive manufacturing sector in order to compete in the global market.

### **Assessing our existing growth mode**

In order to transition into a new mode of development, we must first assess our current mode of development. It indeed is important to objectively evaluate China's growth mode from a historical perspective. If one calls China's economic growth over the past 30 years a miracle, then it is not justified to say in the same breath that China's growth mode was outdated or a failure. In fact, it is not difficult to observe the differences between China and other developing countries on a global scale. For example, the Chinese social consensus of "development is the absolute principle" has been overtaken by "scientific development," prompting effective market reforms through the policies of "crossing the river by feeling the stones," and "dual systems." In another example, when the government implemented a foreign policy of opening up to the outside on many levels, China became more deeply involved in the international division of labor. And even with the world's largest population, China has built a market system that is at least mutually sustainable across its regions if not entirely balanced. And yet, another example is how China keeps both its society and political situation stable while pushing forward both reforms and development.

Local competition is the most significant characteristic of the Chinese domestic economic system. Among provinces, cities, counties, and even local governments, there is competition for external resources to increase local investments and improve development conditions. As long as there is a political institution, there will be another entity to compete with it. This special structure is the result of a marriage between Chinese traditional

governance and the market economy. When the market drives goods and resources across regions, a tough government shows its strength by organizing resources that improve infrastructure, by offering credit to dealers, by improving the quality of local factors, and by improving government efficiency. Such strengths are revealed in the early stages of industrialization. Competition among local governments has caused these institutions to become resources in themselves. It is worth noting that a “development-oriented government” is not pre-planned but rather comes together naturally. This has been the exact case in China.

As a matter of fact, we still have not learned enough from China’s current mode of economic development. We know that we are reaping the benefits of miraculous sustained high growth, but we are still trying to figure out why. However, for the moment, it is possible for us to quickly rule out some important factors. For instance, some consider the fact that the Chinese economy is mainly driven by high savings rates, high investment rates, and high growth rates as problems. If we investigate most other developing countries, those traits are precisely what they lack in the long run and are hard to foster if they do not occur naturally.

Of course, we cannot discount the flaws within China’s economic growth model. The question now is how to understand those flaws. It is well known that the current development model has created certain unbalanced situations, including internal and external imbalances, imbalances between investment and consumption, imbalances among economic sectors, imbalances in development between regions and income inequalities. The real question is whether these imbalances are themselves the root problems or if they merely reflect deeper issues. We believe that we need to focus on the deeper issues. Currently, there are two issues of great concern. One is market distortion of energy, land, finance and labor, which result in poor resource distribution and structural imbalances. For example, distortion within the factors market has led to increased competitiveness of exports and a high proportion of energy-consuming industries. The other is the state-dominated economic system characterized by both the monopolistic non-trade sector (which includes state-owned enterprises) and the competitive trade sector (which includes private enterprises). The former is mainly engaged in basic industries while the latter is mainly composed of export-driven companies. Many studies have shown that the former usually obtains large amounts of resources but displays relatively low productivity and higher financial risks than the latter. It is the latter that drives Chinese competitiveness.

Both the flaws and the advantages of our current development mode are really two sides of the same coin, a coin that got flipped when the government began intervening in resource distribution. When the government was creating rapid growth, internal imbalances occurred. When the government was encouraging investments, rapid growth was no longer possible. Ideally, we should remove all the bad things and keep all the good things within our development mode via deepening reforms, and we should maintain rapid growth by correcting imbalances. Those reforms have not achieved their expected results, but rapid growth continues nonetheless. We, therefore, need to pay close attention to another characteristic of the current development mode, i.e., that rapid growth helps to eliminate imbalances, low efficiency, and potential risks. Bad assets left over from the banking reforms of the late 1990s all disappeared during the period of rapid growth, and China responded to the international financial crisis by ramping up investments. As long



as there is a potential for rapid growth, it is certain that the Chinese economy cannot be stopped from growing rapidly.

### **Challenges posed by the “expiration date” of the current growth model**

The next question facing Chinese leadership is what will happen if rapid growth cannot continue? Here, the end of rapid growth refers to economic fallout, not economic manipulation. We think that when this happens, China will face harsh challenges from two sides.

The first is the exposure of contradictions and risks originally covered up by rapid economic growth. Some may be revealed when economic growth slows, while some others may be exposed during asset re-assessments triggered by changing expectations for growth. If over-consumption in the USA triggered the subprime crisis, then China will have to prepare for similar risks or even a crisis precipitated by excessive and improper investments.

The second is that economic fallout may not only mean a different growth rate but also a different economic structure and a different driver of growth. Cultivating a new economic growth driver is a challenge faced by all countries that have been through this stage of economic transformation. However, the issues China will face in transforming the drivers of its economic growth will be different from those faced by other countries before it.

Roughly speaking, when the fallout comes, China will have to deal with two challenges, one in risk management and the other in transforming the primary growth driver. This paper has listed a series of questions that must be answered. They are as follows: Can China effectively prevent and mitigate risks to the fiscal (governmental) and finance sectors during economic fallout? Can Chinese companies adjust to a slower growth rate and adapt slower profit models? Can the government adjust macro-economic controls and reevaluate goals? Will a more efficient market form, bringing with it a group of large innovative companies and small and medium competitive enterprises? Will that market be able to foster competitive technology and service sectors? Could the government further open markets, reduce restrictions on monopolistic industries, especially entry restrictions in the service sector, and give the service sector more space to develop? Could the government deregulate more higher education institutions in order to adjust to the new social order? Could the government promote faster growth of the middle class by promoting employment, innovation, and income redistribution reforms? Could the government create a modern financial system, one that is adaptable, innovative, and efficient at distributing and preventing risks? Could the government walk away from its role of dominating economic growth and focus on mainly providing public services?

We can break down the issues that come with the transformation of our growth mode into the following three categories: structural, institutional, and time-sensitive. Structural problems represent the outer layer, as they result from a series of imbalances. The middle layer is occupied by institutional problems caused by distortions in resource distribution. It is worth noting that in some cases, certain traits within the institutional structure may be considered both advantages and disadvantages. Although the public expects reforms that reward merit and punish failure, the fact is that there is limited room for this kind of reform to take place. However, if there is still potential for rapid growth,

our economy will continue to grow rapidly, regardless of what anybody says. This goes to show that our current mode of growth is highly adaptive, as it not only maintains rapid growth, but more importantly, accommodates serious imbalances, low efficiency, and hidden risks. This is what we mean by “time-sensitive”.

The point we are trying to make in this paper is that when time runs out on those time-sensitive factors, the nation will need not only to face the problems that will accompany economic fallout, but will also need to develop a new mode of growth that is suitable for the next stage of our development. This is the historical mission of the coming round of reforms in China.

**Competing interest**

The author declares that there is no competing interest.

**Authors' information**

Liu Shijin is the deputy director and a senior research fellow of the Development Research Center of the State Council, China. His main research interests are economic theories and policies, covering enterprise reforms, evolution of economic system, macro-economic policies, industrial development and policies.

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