Introduction

The economic growth of China, since it undertook economic reform and opened its economy to the world 45 years ago, in late 1978, was historically unprecedented in terms of both its speed and longevity. The Chinese economy has been growing without interruption at an average annual real rate of over 9 percent for more than four decades, even though it has slowed down to an average rate of growth of around 6 percent in more recent years. Chinese GDP grew from US$389 billion in 1978 to US$17.37 trillion in 2022 (all in 2022 prices and exchange rate), almost 45 times, to become the second largest economy in the world, with 68.2 percent of the GDP of the largest economy, the United States. What is most remarkable is that during the 45 years between 1978 and 2023, there was not a single year in which the level of Chinese real GDP declined (or equivalently the rate of growth turned negative), despite the many crises that occurred both inside and outside of China. However, due to the outbreak of the COVID-19 epidemic in the city of Wuhan in late 2019, and its subsequent resurgence in Shanghai in 2022, the rates of growth declined to 2.2 percent in 2020 and 3.0 percent in 2022, the lowest and second lowest since the beginning of economic reform.

This is also in great contrast to China's economic performance in the three decades, 1949–1978, before its economic reform and opening to the world, during which its annual rate of growth fluctuated unpredictably and wildly, with a high of 22.3 percent in 1952, the year before the launch of China's First Five-Year Plan, and a low of –27.3 percent in 1961, the last year of the great famine of 1959–1961. Even then, the average annual rate of growth during this pre-reform period was a very respectable 7.5 percent. This high average annual rate was due in part to the rapid economic recovery after the

Communist victory in the Chinese Civil War in 1949.[1] If the period of recovery and rehabilitation of 1949–1952 is excluded, the Chinese pre-reform average annual real rate of growth still stood at 6 percent, higher than those of most developing economies. The annual levels and rates of growth of the Chinese real GDP in 2022 U.S. dollars from 1949 to 2022 are presented in Chart 0.1.

As the Chinese population has been growing continuously between 1978 and 2022, when it declined for the first time, the rate of growth of real GDP per capita has been lower than the rate of growth of real GDP, but by not quite 2 percent. Chinese real GDP per capita grew from US$404 in 1978 to US$12,309 in 2022 (also in 2022 prices) at an average annual rate of 8.1 percent, without any interruption, achieving a more than 30-fold increase (see Chart 0.2). China went from being a very poor country, with a GDP per capita barely above the subsistence level of one U.S. dollar a day, to being a middle-income country,[2] in just a little more than a generation.[3] Even then, the Chinese economy still only ranks below 70th in terms of real GDP per capita in the world. During the pre-reform period of 1949–1978, the average annual rate of growth of Chinese real GDP per capita was 5.2 percent. The rate would drop to 4.0 percent if the recovery and rehabilitation period of 1949–1952 is excluded. The more than doubling of the average annual rate of growth of real GDP per capita in the post-reform period, from 4.0 percent to 8.1 percent, is mostly attributable to the economic reform and opening that was undertaken, with perhaps around 1 percentage point attributable to the decline in the rate of growth of the Chinese population as a result of the adoption of the "one-child" policy in 1979 in China.[4]

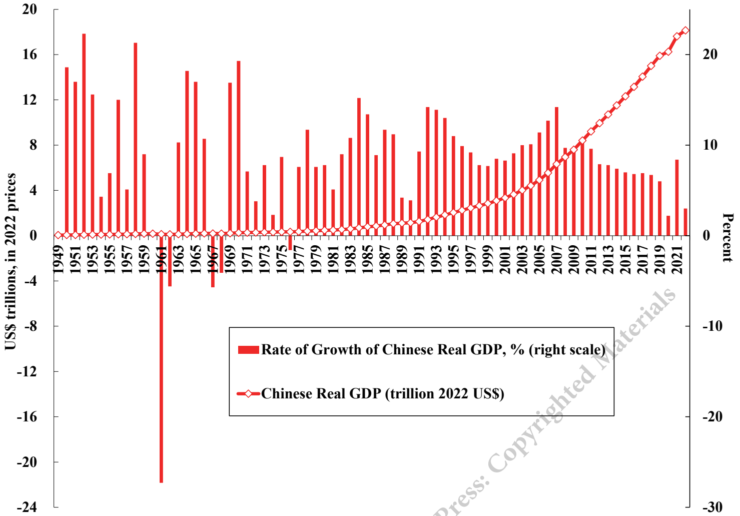
1 There are also some questions with regard to the reliability of the Chinese economic statistics during the Great Leap Forward period of 1958–1959.

2 The threshold for a middle-income country is often taken to be an annual GDP per capita of US$12,000.

3 A generation is usually taken to be between 25 and 30 years.

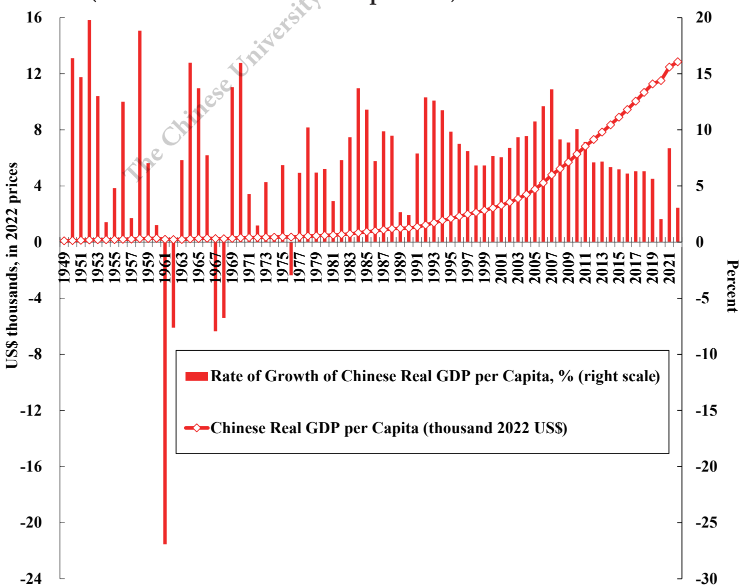
4 The "one-child" policy resulted in a lower population and a lower level of household consumption, hence a higher rate of national saving and a higher rate of national investment, resulting in a higher rate of growth of real GDP per capita.

Chart 0.1. Chinese Real GDP and Its Annual Rate of Growth (Trillion 2022 US$ and percent)



Source: National Bureau of Statistics of China, converted to 2022 U.S. dollars by the author.

Chart 0.2. Chinese Real GDP per Capita and Its Annual Rate of Growth (Thousand 2022 US$ and percent)



Source: National Bureau of Statistics of China, converted to 2022 U.S. dollars by the author.

The Chinese development experience since 1978 has been most unexpectedly and spectacularly successful. The first time I visited China as an adult was in 1979, as a member of the very first delegation of U.S. economists to China since the establishment of the People's Republic, under the auspices of the American Economic Association. Among the ten members of the delegation, which included Prof. Kenneth J. Arrow and Prof. Lawrence R. Klein, both Nobel Laureates in Economic Sciences, I was the most optimistic about the Chinese economic prospects at the time. I predicted an average annual rate of growth for the Chinese economy of 8 percent, whereas the predictions by my fellow members of the delegation were all much lower, some as low as 1 percent. As it turned out, the Chinese economy achieved an average annual real rate of growth of over 9 percent between 1978 and 2022. No other economy in recorded history has grown at as high a rate for as long a period as China has done. The questions that naturally arise are: Was the Chinese economy a miracle? Or was it a mere bubble? Will the Chinese economy begin to stagnate like the Japanese economy did in the 1990s, and perhaps even go into decline? Will it be able to escape the "middle-income trap"? If it is not a miracle, can the Chinese development experience be replicated elsewhere?

A miracle is defined in the dictionary as "a surprising and welcome event that is not explicable by natural or scientific laws and is therefore sometimes considered to be the work of supernatural power." The highly successful Chinese economic development performance over the past four and a half decades was clearly surprising and welcome, but was it really inexplicable? In economics, a bubble usually refers to a fortunate situation that arises quickly, but which may be unrelated to reality and unlikely to last. Is the Chinese economy likely to continue to grow steadily, albeit at somewhat lower rates, or will it burst and collapse like a bubble? I hope to convince readers that the growth of the Chinese economy is neither a miracle nor a bubble and that it will continue its solid and steady growth.

Section I and the chapters included therein are concerned with the following questions: What are the sources of this unprecedentedly high and sustained rate of economic growth? Can the Chinese economic growth of the past 45 years be understood in conventional economic terms?

Of course, one obvious explanation for the high rate of growth of real output is the high rates of growth of the primary inputs—tangible capital, labour, and human capital. Their rates of growth have indeed been high for China, both before and after the economic reform of 1978. The establishment of free markets and the introduction of conditional autonomy for the producers under the economic reform begun in 1978 obviously had a large and positive impact. But there were also other factors at work as well in the Chinese economy: for example, the growth of intangible capital such as human and Research and Development (R&D) capital, the existence and realisation of significant economies of scale and "learning by doing," the initial slack in the economy prior to the economic reform in 1978, and technical progress (or equivalently the growth of total factor productivity [TFP]). What are the relative contributions of these different sources of economic growth since 1978? How much of the Chinese economic growth is due to the growth in inputs, and how much is due to increases in efficiency (or equivalently technical progress or the growth of TFP)? How much is due to "working harder"? And how much is due to "working smarter"?

However, high rates of growth of inputs alone do not always guarantee success in achieving a sustained high rate of growth of real output, in the absence of appropriate facilitating and supporting government economic policies. Many developing economies have had high rates of growth of inputs but nevertheless have not been able to grow in a sustained and sustainable manner. The economy of the former Soviet Union was such an example. The economic strategies adopted and the economic policies and measures implemented can and do make a difference. The chapters included in Section II review and analyse the economic strategies, policies, and measures employed by China in its process of economic reform and opening to the world since 1978. Choosing economic strategies and policies that were appropriate to the unique Chinese domestic conditions and environment was critical to the success of Chinese economic reform. These include export promotion, maintenance of a stable exchange rate coupled with capital control, development of basic infrastructure, macroeconomic stabilisation, and implementation of the "grandfathering" principle and the "dual-track" system. However, it also turned out that many of the Chinese policies and measures were similar to those used in other East Asian economies, beginning with Japan, during the early stages of their economic development. Some pre-existing economic policies were already in place before 1978, and they were not significantly modified under the economic reform. One such policy is the low-wage policy in the non-agricultural sector. Prior to 1978, all workers in the non-agricultural sector were employed, directly and indirectly, by the state, which could unilaterally dictate the wage rate and other conditions of employment.[5] A low-wage policy would minimise aggregate household consumption and maximise the profits of state-owned enterprises (SOEs), which would in turn help to keep the national savings rate high. Moreover, a continuing low wage rate in the non-agricultural sector would enhance its capacity to absorb the continuing inflow of the surplus labour from the agricultural sector and put it to much higher productivity use in the non-agricultural sector.

A low-wage policy also supports a high national savings rate,[6] which in turn enables a high domestic investment rate, without having to rely on the more fickle inflows of foreign investments, foreign loans, or foreign aid. And to the extent that the savings are under the control of the central government, they can be used to finance investment in basic infrastructure, such as communication and transportation networks, ports and airports, and power plants, which are absolutely essential in the early stage of economic development.[7] Moreover, with the availability of fresh domestic savings for new investments every year, there is no pressure to restructure or privatise the existing, almost all state-owned, enterprises, which would have been both economically and socially disruptive. It is interesting to note that in neither China nor the economies of Taiwan and South Korea in earlier times, was there any systemic privatisation of state-owned enterprises, as in the former Soviet Union and the formerly socialist Eastern European countries during their transitions to market economies. This was possible, in part, because of their respective high domestic savings rates. In the Chinese case, many state-owned enterprises eventually became publicly listed companies on stock exchanges in Hong Kong, Shanghai, and Shenzhen. However, in almost all such cases, the

5 These would include all the employees of the central and local governments, their affiliated service units, as well as all the state-owned enterprises. They were all paid according to the same wage and salary scales.

6 Of course, Chinese households, like other East Asian households, are already high voluntary savers.

7 For example, in China's First Five-Year Plan (1953–1957), approximately 55.8 percent of total investment was devoted to investment in basic infrastructure.

government retains a majority stake and management control. There was no privatisation of control.[8] The Chinese government wants to retain state-owned enterprises as one of its instruments for the control of the economy and the implementation of social policies, such as environmental preservation, protection and restoration, and poverty alleviation. Despite this, the private sector in China has grown rapidly since the economic reform in 1978 to account for 88 percent of its urban employment[9] and 95 percent of its total profits in 2021.[10]

Another such policy, which was adopted almost concurrently with the beginning of the economic reform, was the "one-child" policy, a population planning policy of China introduced in 1979 and implemented in September 1980. The policy remained in force until the beginning of 2016. It has had a large impact on the population trajectory of China. Without the "one-child" policy, the Chinese population would have been at least a couple of hundred million people larger today, implying much higher aggregate household consumption, a lower national savings rate, a greater demand for social services, slower GDP growth, higher unemployment, lower real GDP per capita, higher prices for food and other necessities, and much greater damage to the environment. However, the demise of the "one-child" policy was also timely, perhaps even slightly overdue, as the Chinese working-age population[11] had begun to decline, the Chinese society had begun to age, and the Chinese dependency ratio had begun to rise.

---

8 The same is true of the more recent "mixed ownership system reform" (混合所有制改革), under which SOEs partially privatise some of their subsidiaries but retain a majority ownership and management control. In principle, the SOEs can also acquire a majority stake and management of control of existing privately owned enterprises.

9 According to data from the National Population Census.

10 According to data from the National Bureau of Statistics of China. Unfortunately, there are no reliable statistics on the share of the private sector in GDP.

11 However, the Chinese definition of its working-age population is different from those of other countries. In China, the mandatory retirement age for a woman is 50 (55 if she is a cadre) and for a man, 60. Thus, the size of its working-age population is significantly smaller than that of another country with similar demographics.

One of the major new economic initiatives adopted by the Chinese government in 1978 was opening the economy to both international trade and direct investment. Machinery, equipment, and raw materials which could not be produced in China at the time would be imported. In order to pay for these imports, China would promote exports as well as inbound foreign direct investment. The promotion of exports required the setting of an internationally competitive exchange rate for the renminbi. From the early 1950s to late 1971, the renminbi exchange rate stood at a constant 2.46 yuan per U.S. dollar (see Chart 0.3). The international embargo against China that began with the Korean War continued even after the fighting ended with an armistice in 1953. There was little international trade between China and the rest of the world, except for the essentially barter trade between China and the former Soviet Union and the formerly socialist Eastern European countries.[12] In the 1960s, even the limited barter trade dwindled because of the then Sino-Soviet dispute. The only country in Europe that had any economic exchange with China at the time was Albania. However, with the secret visit of U.S. Secretary of State Henry Kissinger to China in July 1971 and the subsequent visit of U.S. President Richard Nixon in February 1972, international trade between China and the U.S. and other Western countries began to grow again.

During the period 1971–1978, the renminbi exchange rate actually appreciated, reaching its highest level vis-a-vis the U.S. dollar of 1.46 yuan in 1980, partially driven by capital inflows. Then China began to undertake a series of explicit and implicit devaluations of the renminbi, which reached 8.7 yuan per U.S. dollar at the beginning of 1994, when China unified its multiple exchange rates and adopted current-account convertibility. The renminbi then appreciated slightly to 8.3 yuan per U.S. dollar until the East Asian currency crisis of 1997–1998, during which the renminbi exchange rate held steady and remained unchanged with respect to the U.S. dollar even as all of the other East Asian currencies with the exception of the Hong Kong dollar and the Japanese yen underwent significant devaluations.

---

12 There were significant imports of machinery and equipment from the Soviet Union during the First Five-Year (1953–1957) Plan period, financed by a combination of Soviet aid and loans.