



# Economic Letter

## Long View of China Suggests Inevitable Slowdown

by Anton Cheremukhin

**ABSTRACT:** Market reforms account for almost half of China's growth miracle since 1978. However, the pace of expansion is bound to slow down as China approaches the technological frontier.

China has grown at an average annual rate of 9.4 percent since beginning its economic reforms in 1978—an extraordinary performance reminiscent of the much smaller Asian Tiger economies of South Korea and Taiwan decades earlier.

It's difficult to maintain such expansion. China's growth rate has recently slipped to the 7–8 percent range, prompting some analysts to ask whether the miracle has come to an end. The short answer may well be that China, while facing a robust future, is encountering the increasing constraints of an advanced economy.

Understanding the future of the Chinese economy requires understanding its past—at the very least, the past since the Communist Party founded the People's Republic of China in 1949 and regular data collection started in 1952. Specifically, it's useful to examine the speed with which China grew before its relatively recent reforms and how the implementation of those reforms accelerated growth.

China's rise has received much less attention from economists than it deserves, and the prereform period is usually mentioned in the context of the disaster of the Great Leap Forward (1958–62) and the turmoil of the Cultural Revolution (1966–76). This is unfortunate. Prereform China not only implemented one of the

largest economic policy experiments and development programs in modern history, but its prereform performance provides an important benchmark for the subsequent growth miracle.

Data on aggregate and sectoral variables—such as output, consumption, investment and trade variables, and capital and labor inputs—for China for the past 60 years help illustrate this benchmark's usefulness.<sup>1</sup> These data help uncover the factors that contributed to growth during each period. They show the disproportionate distribution of the factors of production, labor and capital across sectors and how the productivity of the factors changed over time.

This approach enables a quantitative evaluation of the sources of growth in China during the entire 60-year period from the perspective of a standard, two-sector neoclassical growth model. This is a workhorse model used to study growth and structural economic transformation. It also provides a way to assess the effects of technological advances and the barriers to capital accumulation and labor and capital reallocation. The data viewed through the lens of the model make possible a comparison of the performance under the rule of Mao Zedong to the economic miracle associated with the post-1978 economic reforms (*Table 1*).

## Sources of Growth

During the pre-1978 communist period, China performed respectably, achieving 5.6 percent growth in real (inflation-adjusted) gross domestic product (GDP), a broad measure of output. Expansion of the labor force accounted for a sizeable part of that, 3.3 percentage points. However, manufacturing productivity growth also played an important role, contributing 1.4 percentage points to GDP growth. The importance of productivity growth is surprising because the Chinese economy under Mao is often associated with inefficient production—for example, backyard furnaces or mammoth industrial projects.

A true growth miracle occurred in the postreform period. The behavior of real GDP per capita, with and without reforms, is shown in Chart 1. The 9.4 percent

annual growth rate included a dramatic acceleration in manufacturing productivity, accounting for 5.8 percentage points, and a significant reduction in intersector distortions of prices and wages, which explains 1.1 percentage points. Meanwhile, the introduction of the policy of limiting couples to one child reduced by more than half the contribution of demographic factors in the post-1978 period, amounting to 1.3 percentage points.

## Post-1978 Reforms

In an effort to better understand the sources of the additional 4 percentage points of top-line growth and link them to specific reforms, it's helpful to examine the timing and economic consequences of the changes.

A key factor, accounting for 1.7 percentage points of extra GDP growth, is the rapid

expansion of private sector manufacturing productivity (*Table 2*). It is partly the product of market reforms that created a competitive environment for entrepreneurs in the private sector and increased incentives to produce more efficiently and adopt state-of-the-art technologies. The expansion of the private sector and the movement of people and resources from the state to the private sector provided an additional 1 percentage point to growth. The overall effects of reorganization and incentivization of the manufacturing sector accounts for a 3 percentage-point increase in GDP growth.

Other reforms also played a substantial role; two of them are particularly noteworthy. Taking apart monopolies in the manufacturing and agricultural sectors accounts for an extra 0.6 percentage point of GDP growth. Price and housing reforms that better aligned the relative prices with relative wants of the consumers account for an additional 0.2 percentage point of GDP growth. The overall result of the reforms for the growth and structural transformation of the Chinese economy is substantial.

Without reforms, China's GDP per capita would have been \$2,536 versus \$10,274 (in 2012 purchasing-power-parity dollars), and the share of labor force in agriculture would have been 57 percent rather than 33 percent.

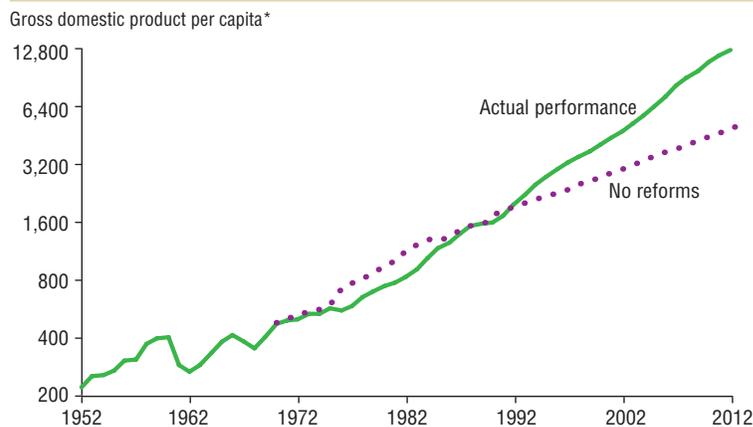
**Table 1** What Drove China's Gross Domestic Product Growth?

	1953–78 (percentage points)	1978–2012 (percentage points)
Agricultural productivity	0.0	0.8
Manufacturing productivity	1.4	5.8
Reduction in intersector distortions	0.3	1.1
Demographics	3.3	1.3
Other	0.7	0.4
Total	5.6	9.4

NOTES: Productivity refers to total factor productivity; manufacturing sector includes all nonagricultural activity, and the "other" category includes defense spending, foreign trade and investment distortions.

SOURCE: Author's calculations.

**Chart 1** China Experiences Robust Growth Before Reforms



\*1990 purchasing-power-parity international dollars.

SOURCES: National Bureau of Statistics of China; author's calculations.

## Conventional Explanations

To understand what to expect from China, it is crucial to understand which economic mechanisms have been particularly important for growth. Analysis casts doubt on some common explanations for China's rise.

First, consider the argument that growth in China is investment-driven. Proponents point to the surge in investment from 20 percent of GDP in the 1960s to 45 percent in 2010 and to the associated buildup of capital stock that has led to increases in the amount of capital per worker (capital deepening). They argue that growth has been artificially boosted by excess investment which, as in the former Soviet Union, sacrifices consumption for increasingly wasteful capital accumulation.

This narrative would imply a significant increase in the distortions rep-

**Table 2** Post-1978 Reforms Boost Gross Domestic Product Growth

	GDP growth (percentage points)
Agricultural sector reforms	0.3
Manufacturing sector reforms	3.0
a) Private sector productivity	1.7
b) Public sector productivity	0.3
c) Reallocation to private sector	1.0
Market reforms	0.9
a) Price and housing reforms	0.2
b) Demonopolization	0.6
c) Other	0.1
Total	4.2

NOTE: Some numerical discrepancies between Tables 1 and 2 are attributable to consideration of the “no reforms” scenario starting in 1975.

SOURCE: Author’s calculations.

resenting implicit subsidies for capital reallocation across sectors and time periods. However, closer inspection finds no noticeable change in these distortions, suggesting that their quantitative effect is negligible. This finding indicates that, given the substantial growth potential of China, large investment projects may be close to a socially desirable policy that enables China’s economy to achieve its full potential, rather than a distortionary policy aimed at boosting the economy in the short term at the expense of the well-being of the people.

Second, consider the narrative that China’s growth is export-led. This view proposes that an increasing share of demand coming from abroad substantially speeds up growth.

Again, a closer examination finds that trade (the simple impact of net exports by sector) plays a limited role. In particular, exchange of goods per se plays little role, while a faster spread of leading-edge technologies that might come as an unintended consequence of openness to trade likely contributes to GDP growth by speeding up productivity growth.

Third, consider the argument that the relaxation of *hukou*—household registration policies that restrict movement of people from villages to the cities—played an important role. This would tend to result in a narrowing difference between wages in agriculture and manufacturing, and thus, decrease distortions on labor mobility across sectors.

However the contrary occurred—labor mobility distortion increased, most likely reflecting the importance of human capital and returns on skill in the nonagricultural sector.

Finally, there is scant evidence that state capitalism—in which the government organizes and leads economic activity—is responsible for China’s growth miracle. In fact, the growth rate of productivity in the state nonagricultural sector was the same post-1978 as it was during Mao’s era. Private sector productivity growth, reallocation of labor and capital from the state to the private sector, and the reduction of consumption

and production distortions explain virtually 100 percent of China’s additional growth and structural transformation.

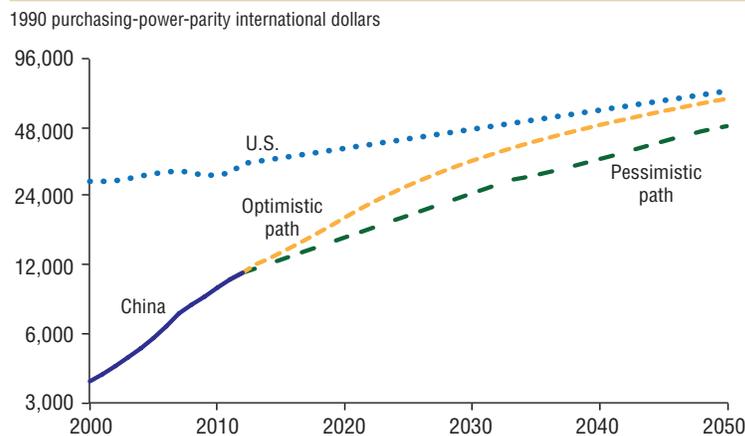
## Areas for Improvement

Given all that China has already achieved, a natural question is how much room for improvement is left and how fast can China grow in the years to come. Based on a model-based projection to 2050, China can expect robust future growth.

Since the 1950s, China has been catching up by removing barriers to reallocation of resources between sectors of the economy and by adopting state-of-the-art technologies. The natural ceiling to consider is the level at which China would remove all barriers to reallocation of resources and where production technologies catch up with those of the developed countries, such as the U.S. When that level is reached, no country can grow faster than the technological frontier, which has historically allowed for income per capita expansion at roughly 1.5 percent annually.

Consider two growth scenarios—an optimistic one and a pessimistic one. Both are shown in Chart 2, relative to the “ceiling,” approximated by the projected path of U.S. GDP per capita. The optimistic scenario assumes that productivity keeps growing and reforms continue at the same pace as in the reform period. The pessimistic scenario assumes that productivity growth slows down to its prereform pace

**Chart 2** Real Gross Domestic Product Per Capita



SOURCES: National Bureau of Statistics of China; author’s calculations.

and reforms stop, preserving distortions at their current levels.

The growth rates corresponding to the optimistic projection suggest that China can keep growing at the current 7–8 percent annual rate for about a decade (*Table 3*). Then, the growth rate is bound to slow to 5–6 percent in 2030 and to around 3–4 percent as technology catches up with that of the U.S. by 2050. Alternatively, China growth could slow down more now, but then it would take a much longer period to catch up with the U.S. In that case, China can sustain a 4–5 percent growth rate for many decades to come.

**Why is growth bound to slow down?** First, a substantial part of the distortions that could be removed through reforms has already been taken away. There is only limited room for improvement in the allocation of resources between major sectors of the economy. Notably, further reforms aimed at increasing competition and demonopolization of the economy could help remove remaining intersectoral distortions and contribute to faster growth.

Second, China is quickly approaching the ceiling on productivity determined by frontier technologies. This projected ceiling cannot be exceeded without a dramatic surge in the pace of innovation and technological improvement worldwide.

### Bumpy Path Forward

The model used focuses on long-run factors behind growth and structural transformation, but it has less predictive

**Table 3** Two Scenarios of China Growth Anticipate Slowing

Time period	2012–24	2024–36	2036–50
Optimistic	7.8	5.2	3.6
Pessimistic	5.0	4.6	3.9

SOURCE: Author's calculations.

or explanatory power over short-term fluctuations. To follow either of the two projected paths going forward, China must overcome some obstacles.

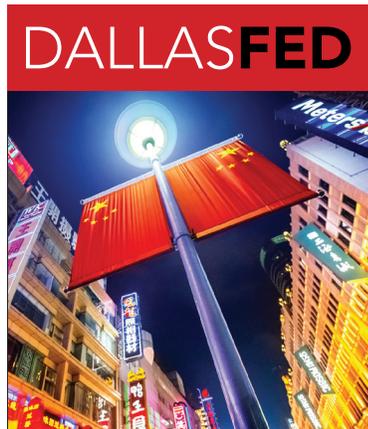
As China transitions further away from a centrally planned, state-run enterprise, it becomes subject to the same stumbling blocks as other market economies. Like its predecessors, Japan and the Asian Tigers, China is becoming more vulnerable to coordination failures of the free-market system, showing up as sudden stops, banking or financial crises. China's officials will be tested as they seek the right balance: keeping their positive role of coordinating markets, but without overregulating the economy.

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### Note

<sup>1</sup> "The Economy of People's Republic of China from 1953," by Anton Cheremukhin, Mikhail Golosov, Sergei Guriev and Aleh Tsyvinski, National Bureau of Economic Research, Working Paper no. 21397, July 2015.

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