CHINA'S MIRACLE

From the Perspective of Political Economy

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Abstract: We construct a framework for the interaction between economic system reform and the technological-economic system in order to analyze the dynamic process of China's economic transformation and development. China has passed through three major phases of economic system reform, which have involved reforming the commodity economy through planning, establishing the socialist market economic system, and improving the socialist market economic system. Correspondingly, China has gone through three technological-economic systems, which may be summed up as: "quantitative subsistence consumption and extensive production without technological progress," "qualitative subsistence consumption and extensive production with technological progress," and "standardized mass consumption and mass production." Since 2012, China's economy has entered the era of a "new normal," characterized by lower growth rates. This indicates a fundamental shift in the patterns of social demand away from the current technological-economic system that is growing incapable of sustaining rapid capital accumulation and thus needs transforming. To better explain China's miracle, we focus on the ways in which the contradictions within each technological-economic system have evolved and have been resolved through targeted reforms to the economic system. Eventually, these reforms will lead to a new system that facilitates further capital accumulation.

Keywords: transformation; reform and opening-up; China; political economy

Since the "reform and opening-up" initiated in 1978, China has sustained high growth rates for over 40 years, significantly improving popular living standards. The country is now home to a middle-income class of more than 400 million people.[1] Many attempts have been made to explain the "China Miracle." The most influential of these attempts have been based on market-oriented reforms, comparative advantage, resource endowments, and tournaments between local governments. First, the theory of market-oriented reform stresses the indispensable function of the market in allocating resources. Insisting on the inherent inefficiency of the centrally planned economy, proponents of this theory argue that a free market represents the only way to avoid distortion of information in the allocation of resources as well as to offer sufficient incentives (Zhang 2007; Li 2008; Zhou 2017). Second, comparative advantage theory argues that following attempts to implement the costly practice of import-substitution industrialization, China eventually gave in and accepted the export-oriented mode of industrialization, fully utilizing its comparative advantage in labor-intensive industries (Lin, Cai, and Li 1999). Third, resource endowment theory, which is in practice a more sophisticated version of the previous explanation, stresses a number of other historical and geographical factors, such as the virtually unlimited supply of labor, the geopolitical advantages of East Asia, cultural traditions, and the legacy of the planned economy era (Goldstein 1995; Rawski 1995; Putterman 1995; Lardy 1995). Lastly, tournament theory argues that the vital role of economic performance in the promotion of government officials gave them incentives to compete with each other at the local level to boost growth, especially after the public finance reform of 1994 granted local governments a larger claim on tax revenues (Qian and Weingast 1996; Zhang 2005; Zhou 2007; Zhang 2009).[2]

These prevailing explanations, though providing important insights, are not without flaws. First, marketization does not necessarily lead to rapid growth, and many countries that have abandoned the planned economy in favor of a free market have not performed better.[3] Second, China did not follow the classical mode of comparative advantage. Even in the early stages of its reforms in the 1980s and 1990s, capital and technology-intensive products made up a considerable portion of China's exports, a pattern that was to become more marked over the years (Lu 2001). What is more, various other nations that have adopted an export-oriented path have not experienced similar growth or upgraded their productive economies to include more advanced industries.[4] This phenomenon is often summarized as the middle-income trap or premature deindustrialization. Third, endowment theory, despite partially acknowledging the contributions of the planned economy era, tends to rely too much

on institutional and cultural peculiarities, and has thus been unable to explain why these particularities have come to favor modernization only in recent decades after seemingly being reactionary for centuries. Fourth, tournament theory exaggerates the role of local governments and ignores the key function of the central government. Many advantages that certain local governments have possessed have essentially been the result of exclusive dispensations granted to them by the central government; in practice, these advantages have represented political monopolies that should have vanished after the access to them spreads to other areas. This explanation not only overlooks the imbalance between China's inner provinces and the coastal regions, but also exaggerates the impact of government officials on the economy (Tao et al. 2009). These four mainstream explanations do indeed grasp some important features of the development of China, but they are unable to convey the overall picture, and are incapable of explaining recent structural changes that have occurred under new circumstances. Now that China's economic growth has slowed significantly since 2012, people have been seeking new drivers of growth that are able to support further economic development. The four explanations that aim mostly at explaining the history of growth have not offered much help.

We argue that the key to explaining the miracle of China does not lie in isolating a range of variables that have contributed to its growth.[5] Instead, it requires a long-term historical analysis of the development of the contradictions involved, showing how the crucial factors within the economy have conflicted with and supplemented each other at different stages. The meaning of economic development consists of changes to the capabilities and structures of production (Chang 2011). These changes must meet social needs. The coordination of production and social needs, and the conflicts between them, represent the defining factors of economic growth. The various structures and capabilities of production that satisfy social needs form the technological-economic system. Reform of economic institutions is the fundamental force that mitigates the contradictions between production and social needs and that renovates the technological-economic system, creating one with greater potential. The miracle of China should be regarded as a process of transitional growth. First, it involved the transition from a planned to a market economy. Second, growth occurred during the transition, and can be divided into stages in line with the contradictions between production and need. The aim here is to clarify how reforms in different periods have mitigated the conflicts between production and need, forming new technological-economic systems able to sustain growth. The paper proceeds as follows. In section 1, we propose a dialectical framework of "economic reform and the technological-economic system." The key proposition here is that economic reforms overcome the contradictions within old technological-economic systems and shape new systems that are capable of sustaining further capital

accumulation. Sections 2 to 5 define three historical stages of transitional growth in China as well as the ongoing reforms since the beginning of the "new normal" era. The final section is the conclusion.

1. Economic Reform and the Technological-Economic System

Human history is a process in which contradictions manifest themselves and are resolved. The inner contradictions of the economy shape its development. The principal contradiction is between social needs and the mode of production and appears in different forms in accordance with historical stages. New social needs appear along with the satisfaction of old social needs through the process of production. As productivity develops, social needs show a historical trend of upward movement in terms of quantity and quality (Yao 2008). The social mode of production is the specific mix of products and craftsmanship, forms of technology, organization, and management that is dominant within the economy at a certain stage. The existing social needs and the mode of production that supplies them together constitute the technological-economic system. Under a particular system of economic institutions, the mode of production tends to develop in a direction that favors the meeting of social needs, which enables the technological-economic system to create an abundance of profitable investment opportunities leading to rapid capital accumulation and economic growth. However, the mode of production can limit the degree of satisfaction with social needs. The contradiction between these two categories becomes restrictive, and must be resolved through renovating the technological-economic system. Because of the different adjustment speeds of economic entities, the contradictions within the technological-economic system cannot be resolved by the system itself, so the most significant feature of this renovation will be institutional reform. In short, institutional changes originate from the endogenous need to renovate the technological-economic system. The forging of a new technological-economic system requires institutional changes, and thus a shift in the functioning of the economy, an economic transition.

Economic growth is not a natural process, in the sense that no factor can lead to economic growth in a simple, linear fashion. It is possible that a factor that has supported economic growth at a certain historical stage will later start to hinder growth. Reforming economic institutions so as to renovate the technological-economic system is a process of adaptation and trial-and-error, shaped by the interaction between the government, firms, and households.

First, enterprises make up the principal sector of production. A mode of production that can meet social needs usually appears in a few enterprises or industries and then proliferates to encompass other enterprises or industries or even the entire economy, with the effect of boosting growth.

Second, consumption within the household sector defines social needs.[6] At each particular historical stage, social needs decide the direction in which the mode of production develops. The upgrading of consumption always proceeds in advance of adjustments to the mode of production.

Third, the government is the promoter of institutional reform. When capital accumulation is hindered, the existing economic institutions may become an obstacle to the transformation of the technological-economical system. It is then up to the government to introduce reform measures to eliminate the institutional and structural factors that hinder transformation through altering the prevailing economic relations (including the relations between the rights of economic entities, the relations of competition between enterprises, the relations of income distribution and redistribution, etc.), encouraging the economic entities to change their behavior in order to reshape the technological relationship (including the organizational form of the production process, the factor cost structure, etc.). On this basis, the government guides enterprises in eliminating backward modes of production and forming new ones that meet social needs. This requires market competition and also medium- and long-term planning, so as to ensure the transformation of the technological-economic system in the direction of promoting economic growth. Under the new technological-economic system, society and the mode of production need to achieve a higher level of dynamic balance. With these mechanisms, a new technological-economic system that dominates accumulation in the next historical stage can be formed. Following the reform, a period of relative effectiveness and stability is likely to ensue until the mode of production again ceases to be able to meet new social needs, and institutional reforms are once more required.[7]

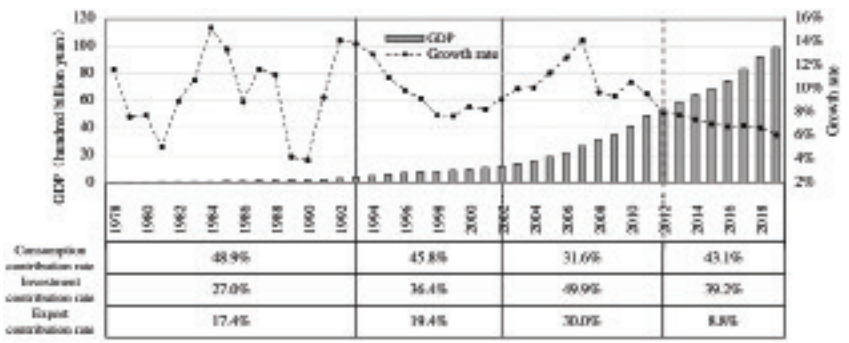

Figure 1 GDP Growth and Contribution Rate in China, 1978–2019

Source: China National Bureau of Statistics, http://data.stats.gov.cn/.

Notes: The solid vertical lines, corresponding to the years 1993 and 2002, serve to divide the three stages. The dotted vertical line, corresponding to 2012, shows the beginning of the "new normal," when the contradiction within the current system became evident. The contribution rates of consumption and fixed capital formation are calculated using the expenditure approach to GDP.

China's transitional growth is guided by the gradual reforming of economic institutions. The Chinese government has mostly been correct in its analyses and judgment of the situation, allowing it to pinpoint the most acute problems and thus meet the evolving needs of the people. In a broader time span, China has undergone a fundamental transition from a planned economy to a socialist market economy, a transition that is endogenously required for the renovation of the country's technological-economic systems. More specifically, at the time when the geopolitical tension surrounding China eased in the late 1970s, the technological-economic system that featured "high accumulation, low consumption, and assigning priority to heavy industry" was unsustainable. The long-suppressed civilian consumption could not be met by the country's industries that were aimed at national defense. The need was urgent for institutional adjustment and renovation. From the perspective of historical stages, we can observe a match between the technological-economic systems and gradual institutional reform. The growth rate reached an impressive level in the 1980s, then a still higher level in the 1990s. Since the 2000s, growth has shown both scale effects and growth rate effects (Figure 1).

During the first stage (1978–1992), the reform summed up as a "commercial economy with planning" lowered accumulation and increased civilian consumption. The corresponding technological-economic system of "quantitative subsistence consumption and extensive production without technological progress" was able to feed the population and provide basic consumer durables. The restoration of civilian consumption made a major contribution to rapid growth. In 1978, consumption contributed only 23.8% to GDP growth, much less than the contribution of fixed capital formation (67.0%). Throughout the entire 1980s, however, the contribution of consumption (48.9% on average) was higher than that of fixed capital formation (27.0%). The contribution of exports during this time was relatively small (17.4%) (Figure 1). Toward the end of this era, the relatively low quality of much of the output under this extensive mode of production no longer met the demands of consumers. When the shocks from political unrest were added in, the economy entered a phase of stagnation that lasted from 1989 to 1992.

The second stage (1993–2001) followed Deng Xiaoping's famous tour to South China in 1992, and saw the establishment of the "socialist market economy with Chinese characteristics." New fundamental institutions were founded, creating the technological-economic system described as "quality subsistence consumption plus extensive production combined with technological progress." In this period, the reform of state-owned enterprises (SOEs) was carried out in an incremental way, that is, maintaining the existing SOEs but also encouraging the rise of new private enterprises, especially in new industries or in those where large-scale SOEs have mostly been absent. A taxation reform in 1994 divided responsibility

for gathering revenues between the central and local governments. The central government coordinated the building of key infrastructure and major projects in upper-stream heavy industries, providing the basics for industrialization. The local governments competed with each other for private and foreign investments, usually by offering tax concessions, lower land prices and other less explicit inducements, or simply by promising to reduce administrative regulation. The private enterprises, foreign enterprises and joint ventures dominated the rapidly growing new industries, and satisfied the new needs of quality subsistence consumption. Growth during this second stage was driven by consumption and government-backed investment. The contribution of consumption averaged 45.8% in this period, some 3.1% less than in the first stage, while the contribution of fixed capital formation increased to 36.4%, peaking at 59% in 1993. Exports were not yet making a prominent contribution during this period, averaging 19.4% (Figure 1). However, as subsistence needs were gradually satisfied, consumption once again became the major constraint on growth. The central government introduced government bonds to maintain the declining levels of investment and consumption, but the effects were limited.

China's accession to the WTO in 2001 marked the beginning of the third stage of growth (2002–2011). The socialist market economy was improved, and a new technological-economic system summed up as "standardized mass consumption and mass production" was instituted. China now participated extensively in global production networks, processing materials and producing module components. In cities along the southeastern coast, manufacturing jobs multiplied rapidly, boosting growth and urbanization. Meanwhile, as wages increased, the consumer goods market shifted toward a pattern of standardized mass consumption in accordance with mass production. At the same time, the increased wages and urbanization brought ever-growing demand for housing and automobiles; for about two decades, construction became the center of gravity of China's economy. The construction industry and the processing trade created a strong demand for upper-stream heavy industrial goods and for more advanced technology. The driving forces in this period were exports and investment, with exports on average contributing 30.9% of GDP and fixed capital formation 49.9%. Consumption, however, had a significantly lower average contribution rate of 31.6% (Figure 1).

After the global financial and economic crisis broke out in 2008, the conditions that had favored growth deteriorated rapidly. Export demand was shrinking fast. Bubbles began to appear in the real estate sector. The consumption pattern had been constructed on a foundation of standardization, but goods now needed to be more customizable and personalized. As a result, the consumer goods industry, based on mass production, constantly suffered from excess capacity. Over the

period from 2012 to 2019, the contribution to growth made by exports fell dramatically to 8.8%, and the contribution by fixed capital formation also decreased by 10.1%; meanwhile, the contribution by domestic consumption increased by 11.5% (Figure 1). Growth rates also slowed significantly, from around 10% to around 7%. Even before the growth rate began to slow, the Chinese government warned that the economy could shift to lower growth, and that this might represent a long-term trend. The lower growth that began around 2012 was officially described as the "new normal," and indicated a contradiction between increasing social needs and the technological-economic system. Worried by the seeming decline in the potential for further growth, the Chinese government carried out plans to reform markets, especially the financial market, and also made plans to boost innovation so as to facilitate a structural upgrade to a capital and technology-intensive production system.

2. The Commodity Economy with Planning: Quantitative Subsistence Consumption and Extensive Production without Technological Progress, 1978–1992

After its establishment in 1949, the People's Republic of China faced the imminent threat of armed invasion, while after decades of wars and destruction its industry was practically non-existent. Naturally, China needed to industrialize at a fast pace in order to provide for its national defense. Beginning in 1953, China constructed a technological-economic system that featured "high accumulation, low consumption and assigning priority to heavy industry." This system rested on a centrally planned command economy, and involved high accumulation; low levels of consumption by the population;[8] mostly public ownership of the means of production; state ownership of industrial enterprises; deliberate distortion of the prices of factors of production and final products; lack of autonomy on the micro-economic level; highly centralized resource allocation; and so on. This combination of economic institutions and a technological-economic system was effective for carrying out industrialization, and allowed China to quickly construct a relatively independent and complete industrial system despite the unfavorable conditions. However, the fast pace of industrialization came at the cost of suppressing consumption by the population.

On the one hand, the country's heavy industries and defense plants could not provide enough consumer goods. On the other, household income was strictly regulated. As the geopolitical environment improved, the popular consumption that had been suppressed for decades placed huge pressure on the "high accumulation, low consumption and assigning priority to heavy industry" model. Economic growth also slowed down.

The adverse situation within the economy forced the Chinese government to shift its focus from class struggle to economic construction, in order to raise the country's productive potential and improve the living standards of the Chinese people. Late in 1978, after Deng Xiaoping had become the de facto leader of the Communist Party of China (CPC), the monumental decision was made to introduce "reform and opening-up." Soon, after the government had acquiesced to a number of local attempts to divide collectively owned lands, the practice of allowing families to lease communal lands and work on their own proliferated throughout China's rural areas, and within a few years the institution of people's communes had essentially collapsed. Although the topic remains heavily debated, it is widely considered that the agricultural reform was the decisive factor in making China mostly self-sufficient in foodstuffs from around 1982. The success in rural areas and the steady supply of basic products set the stage for reforms in the urban areas and industrial sector. In 1984, the government announced the goal of building a "commodity economy with planning," creating space both for the existing SOEs and for newly-born private enterprises. The key to this reform was granting more autonomy to lower-level authorities and other entities, with powers ceded from the central government to provincial and municipal governments, from the government to enterprises, and from the government to peasants. Price mechanisms were introduced to particular industries and sectors alongside the existing planned system. Under the new "double-track system," with its parallel planning and price mechanisms, enterprises after they met their planned quotas were allowed to sell excess products at a free market price (usually higher), and to receive the extra profits. The incremental reforms allowed room for private enterprises to grow, gradually shaking up the rigid central planning system but without suddenly breaking it up. This gradualist approach also allowed an indispensable window for restoring expertise related to the market mechanism, setting the stage for a boom in output by small enterprises that were either completely private, or only nominally owned by rural collectives. Most of these enterprises were in new industries and sectors related closely to consumer goods. The potential for production and consumption of consumer goods was quickly released, pushing GDP growth rates to new levels. Between 1978 and 1992 average annual GDP growth rate was 9.6%, with disposable income per capita increasing by five times. Nominal consumption per capita rose from 183 to 1051 yuan.[9]

With improved income distribution allowing greater household spending power, the reform released the potential for consumption, creating a launching pad for further growth. In urban areas, wages for employees were continually adjusted upwards. The principle of "to each according to their contribution" was reinstated, providing larger bonus funds and allowing greater disparity in incomes. With these contributing factors, the annual disposable income per capita of urban

residents kept increasing, from 343.3 yuan in 1978 to 2026.6 yuan in 1992.[10] In the meantime, factors such as the increased prices of agricultural products, lowered prices of agricultural inputs, increased loans to rural areas and the agricultural sector, and the adoption of the family responsibility system provided more incentives for agricultural production and increased the incomes of rural residents. The annual per capita disposable income in rural areas increased from 133.6 yuan to 784 yuan.[11] The increased income unleashed a huge demand for basic consumer goods, including foodstuffs, clothing, daily necessities (including durable consumer goods), and so on. Where foods are concerned, the consumption of grain increased by 20.7% from 1978 to 1992, while the consumption of vegetable oil, large livestock meat (pork, beef, and veal), poultry, eggs, and fish increased by 293.1%, 140.7%, 425%, 293.4%, and 108.3%, respectively. The per capita value of clothing consumed by urban residents increased from 67.6 yuan in 1981 to 300.6 in 1992. Per capita consumption of daily necessities by urban residents increased by a factor of 2.2 between 1981 and 1992. Daily necessities also accounted for a larger proportion of total consumption, rising from 9.6% to 13.5%.[12] Rapidly increasing and evolving demand for durable consumer goods, summed up as the shift from the "old big three" to the "new big three,"[13] led to an explosive boom in sales by the durable consumer goods industry. Taking the "new big three" as examples, the number of color TVs, washing machines, and refrigerators owned by urban families increased by 262, 12, and 124 times, respectively, indicating that durable consumer goods, once almost completely absent, were becoming familiar parts of daily life.[14] Between 1978 and 1992, the annual value of consumption per capita by urban and rural residents rose from 387 and 138 yuan, respectively, to 1979 and 700 yuan, while consumption during the whole 25 year period of the planned economy had merely doubled.[15] During the planned economy era, equalized income distribution had meant that income disparities among rural residents and among urban residents were not particularly great. In urban areas between 1981 and 1992, for example, the consumption ratio of high-income families over lower-income families varied between 2.4 and 3.4.[16]

The decision to give enterprises greater autonomy brought them increased vigor. First, township enterprises during the 1980s became a major driving force of growth. In 1984 the communal enterprises were formally renamed, becoming township enterprises. These enterprises were owned and operated by rural village or county collectives. They were largely left outside the central planning system and had great flexibility because they could adjust quickly and freely in response to the market. Three factors contributed to the success of township enterprises. (1) The townships were home to an abundance of excess labor after the productivity of agriculture had improved. (2) Reform of the public finance institutions[17] granted local governments the right to tax the township enterprises, giving the

local governments increased incentives to promote enterprises as such (Zhou 2006). (3) The central government also provided tax cuts for township enterprises.[18] In 1988, township enterprises contributed 25% of total industrial output, and employed over 100 million people.[19] Second, SOEs were granted more autonomy, but experienced only limited improvements in efficiency. The reforms to SOEs included the following. In 1980, the government no longer appropriated profits from SOEs, but instead levied taxes on them. In 1984 certain enterprises were rented out to their managers, with the managers eligible to keep excess profits. In the late 1980s and early 1990s, an experimental shareholding system reform was carried out. Together, these reforms granted more autonomy to SOEs and offered them increased incentives to improve their operations (Zhou 1998). However, since the SOEs were still subordinate to the government in administrative terms, their operational autonomy remained limited. In addition, the SOEs were essentially still backed by the government; they were subject only to soft budget constraints, and were not formally answerable for profits and losses. For the same reason, it was also practically impossible for the banking system to hold the SOEs responsible for their performance, which not only reduced the incentive for SOEs to improve their management, but would later create an even greater problem of toxic assets that threatened the entire banking system (Aglietta and Bai 2013; Wu 2018). Third, enterprises were appearing that were not owned either by the state or by collectives. Individuals were setting up sole-trader operations, while private firms and foreign or joint venture enterprises were gaining in significance. The ownership of the means of production, in the past mostly state and collective, was undergoing fundamental changes. SOEs still held the dominant or leading status, while enterprises with all types of ownership received equal encouragement to coexist and prosper.[20] In 1990, non-SOEs (including collective township enterprises) accounted for 45.4% of total industrial output, and for 60.4% of total retail volume. Private firms and sole-trader operations accounted for 0.2% of the total number of employees, a figure that rose to 4.7% in 1992.[21]

As the "commodity economy with planning" continued to develop, the technological-economic system of "quantitative subsistence consumption and extensive production without technological progress" came into being. This system aimed to meet the expanding demand for basic consumer goods.[22] The mode of production was extensive, with little or no attempt to introduce technological advances. Its products were rough or of inferior quality, but matched the key needs of the population. The system featured the rapid expansion of light industry (including foods, clothing, and so on) and mass production of basic, durable consumer goods.[23] These products were mostly supplied by the emerging non-SOEs, especially township enterprises. Operating at the lower end of the industrial chain, these enterprises were closer to the terminal demand

exercised by consumers. They were able to achieve similar output compared to SOEs, but often with much fewer employees and with greater flexibility. Since the capital goods sector was still largely state-owned and regulated by planning, the basic industrial goods supplied to the consumer goods sector were usually furnished at less than the market price, thus providing an implicit subsidy. Enjoying these advantages, the consumer goods sector was able to employ an underused labor force, to make full use of the available means of production, and to expand rapidly. The lower costs faced by the consumer goods sector should also be credited in part to the fact that, unlike many SOEs, the enterprises in the sector were not required to provide benefits to their employees. However, the consumer goods sector began at a technological level that was low by both domestic and international standards.[24] The enterprises in the sector were often geographically scattered, only operated locally, and were too small to achieve economies of scale. Incompatible technologies with different origins were introduced blindly.[25] In many cases, the enterprises could only assemble imported modules and components, and their products were often considered inferior to directly imported goods. Because the growth of consumer production was extensive in nature and occurred on a relatively low technological level, the system could meet only the quantitative need for basic consumer goods. Growth at this stage was largely induced by a rapid stacking of factors of production, especially labor and imported machines and equipment (Lu 2001).

In the late 1980s and early 1990s, the expansion in the output of basic consumer goods came to a virtual halt after the need for these goods had largely been satisfied. The emphasis then began to shift toward products of higher quality (Liu et al. 2010). Products of relatively low quality could no longer meet the upgraded consumption needs, and the technological-economic system had encountered a bottleneck, with severe excess capacity. From the early 1990s, the demand for basic, durable goods, such as refrigerators, color TVs, and washing machines, began to stagnate. The rate of growth in the number of these durable goods owned per household fell below 10% per year, rendering a huge proportion of capacity in this area underutilized.[26] The situation in which extensive production was combined with a lack of technological progress arose from the unsynchronized deregulation of prices and from imbalances between industries and sectors under the incremental reforms. Since marketization extended only to lower-stream industries producing consumer goods, where the free price mechanism operated and profits outside the planning system were allowed, a growing imbalance appeared between light industries and heavy industries, such as energy, basic raw materials, transportation, telecommunications, and so on. One indicator of this imbalance was the increasing PPI, which reached 18.6% in 1989.[27] In addition, the emerging enterprises were effectively subsidized[28] by the SOEs; affected by lower

profitability and higher tax burdens, these required greater government assistance. The deteriorating position of the SOEs placed a heavy burden on central government finances, and reduced the ability of the government to regulate the macro economy. This contradiction found its expression in high inflation during 1988 and 1989, when the CPI grew at annual rates above 18% per year.[29] The inflation was followed by recession and stagnation. During three years of economic adjustment (1989–1991), more than 15% of all industrial enterprises recorded losses.[30] Inventories reached a high point of almost 10% of GDP, and the average rate of growth dropped to 5.8%.[31]

3. Establishing the Socialist Market Economy: Quality Subsistence Consumption and Extensive Production with Technological Progress, 1993–2001

The commodity economy with planning valorized the economy, but in the absence of significant technological progress, the extensive existing production could no longer meet the upgraded social needs. To renovate the technological-economic system, further institutional reforms were needed. In 1993, China officially announced the goal of further establishing the institutions of a socialist economy, while reaffirming the market orientation of reform. The new round of institutional reforms included merging the double-track price system, establishing the institutions of modern enterprises, and other major changes in fiscal and financial management, foreign exchange dealings, social security, and other areas. Overall, a new framework of macro regulation was created, with the government guiding the market and the market guiding resource allocation. Despite the rapid inflation around 1994 and the shock of the Asian financial crisis in 1998, China's GDP grew from 1993 to 2001 at an average rate of 9.9%,[32] even higher than in the 1980s. Household income and consumption steadily increased. In 2001, the annual figures for disposable income and consumption per capita of urban residents were 6824 and 7109 yuan, respectively, and for rural residents, 2407 and 2048 yuan.[33]

An important initiative was the reform that divided taxation powers between the central and local governments. This motivated local governments to compete among themselves, and also strengthened the financial capabilities of the central government. Under the terms of the division of taxation powers, the enterprises would no longer pay taxes on the basis of their administrative status. The local governments ceased to be the owners of the enterprises and instead became tax collectors, meaning that their incomes from the township and collective enterprises were sharply reduced and that they needed to look for other sources of income to pay for the new responsibilities now placed upon them. In practice, the modernized tax system encouraged the local governments to attract investments in order to expand their tax base. Local governments came to compete with each other in areas such as labor resources, environmental

regulations, land and infrastructure. "Development zones" were established in the inner provinces, aiming to replicate the success of special economic zones along the coast. The policy summed up as "markets in exchange for technology" attracted foreign direct investment and became the dominant mechanism driving the transfer of foreign technology to China in the 1990s (Kang 1994). Meanwhile, out-of-budget funds, especially the income from acquiring occupied urban lands and selling the right to use them, became a new source of local public finance. Local governments acquired urban lands, took out bank loans, developed land plots, and then acquired more lands. This cycle became the prevailing "managerial city" model of growth. It enabled a rapid yet controlled urbanization. To replace densely populated slums, China succeeded in building a modern infrastructure for the expanding cities, at least in "hardware" respects, even if it did not always provide public services or social security (Zhou 2012). Further, the increased financial resources allowed the central governmental increased latitude for carrying out fiscal policies as well as supporting key large-scale national projects (e.g., the Three Gorges Dam, which began in 1994).

The effort to establish modern enterprise institutions was paralleled by the formation of markets in the factors of production. Economies of scale appeared, and the efficiency of the micro economy increased. First, deepening the reform of SOEs. In an effort to turn the SOEs into modern enterprises with effective institutions, they were gradually changed from administrative subordinates of the government to independent entities competing in the economy. The way in which the principle of reform was applied was no longer uniform for all SOEs. The government basically gave up trying to maintain SOEs in every industry or sector. Instead, the reform followed the principle of "keep the large ones and let the smaller ones go." Large SOEs in key industries were merged into state-controlled corporations to create economies of scale, or in some cases (e.g., telecommunications and electricity) were divided in order to break up monopolies and introduce competition. Meanwhile, smaller SOEs in the industries where competition was stronger were privatized via bankruptcy, sale, auction, acquisition, merger, or other methods. Following the reform, SOEs ceased to exist in most of the industries where they did not have advantages, but remained in industries that were strategically important or that represented natural monopolies, such as railroads, airlines, communications, municipal utilities, energy, research and development (R&D), education, national defense, and finance. In 1997 China had a GDP of 7.4772 trillion yuan, to which state bodies and collectively owned or controlled enterprises contributed 75.8%, or 5.6676 trillion yuan (SOEs contributed 41.9%, or 3.1296 trillion yuan). By contrast, state or collectively owned enterprises in 1978 had made up 99.1% of the total GDP (56.2% for SOEs alone). This indicates that a profound shift had occurred, sharply modifying the dominant status of public ownership.[34] Second, the private economy picked up speed. The 15th National Congress of the CPC stated clearly

that non-public ownership was an important component of the socialist market economy, and established the basic economic system with keeping public ownership as the main body, while allowing the development of various types of ownership. This guaranteed the legal status of the private economy. In order to expand their tax base, local governments accepted private enterprises as the new driver of growth, setting up economic development zones to attract domestic and foreign capital. The private enterprises expanded to occupy the vacuum left by the SOEs. Reinforced by the SOEs that had been retained in certain industries on a basis of specialization, the private enterprises coalesced into vertical industrial organizations.

In contrast to the isolation and lack of coordination that had characterized the 1980s, the degree of monopoly in industry increased during the 1990s. Big industrial conglomerates emerged in heavy industries such as chemical engineering and equipment manufacturing, creating economies of scale, while light industries became clustered in the southeastern coastal area. The overall social division of labor grew more clear-cut, while economic specialization and coordination expanded rapidly. The domestic market also became more unified and integrated (IIECASS 2008). Third, regulation of the macro economy provided the necessary conditions for the modernization of enterprises. The forming of the labor market released redundant personnel in the SOEs, providing labor power for the private sector. The social security system was created, relieving the burden on the former provider, the SOEs. The financial market was established, and over time gained more variety, providing a source of funds for the private enterprises and also gradually tightening the budget constraints to which the SOEs were subject. The trade and foreign exchange reform gradually opened up more industries in which firms were allowed to trade directly on the global market; at the same time, capital flows were kept under control, in practice maintaining a fixed exchange rate that laid a solid basis for the export sector, and that later made it possible to join the WTO. Investment was carried on by more diversified bodies, with firms making investment decisions on their own and replacing the government as the dominant investment source.

In this way, the technological-economic system that involved "quality subsistence consumption and extensive production with technological progress" was formed in the mid-1990s, accompanied by the institutional reforms that established the socialist market economy. As rising incomes allowed a rapid popularization of durable consumer goods, household needs shifted from quantity-based to quality-based consumption. When urban residents upgraded their durable goods, they began seeking better quality, improved functions, and distinctive features. Demand emerged for modern, durable consumer goods such as air conditioners, telephones, computers, and private cars. To meet the ever-increasing need for better products, the Chinese government announced the aim of "shifting from an

extensive to an intensive mode of growth" in the course of the ninth five-year plan. This slogan had been raised as early as in the 1980s, but improved technology and the pressure from rising consumer demands meant that real progress was made in the area during the 1990s (ETCPRC 2000). Structural improvements and technological advances now played a more significant role in growth (Lu 2000), reflecting the guidance that the government provided for intensive investment. To relieve the pressure on basic industrial production and infrastructure, the central government increased its investment in energy, transportation, and telecommunications. In addition, the eventual integration of the double-track system and higher prices for basic industrial products meant that more "social" (private) funds participated in investment in these sectors. Between 1992 and 2002, the proportion of fixed capital formation going to basic industries rose from 14.62% to 49.02% of the total (ETCPRC 2000). Meanwhile, the central government's industrial policies, together with the competition for foreign capital exercised by local governments, encouraged the development of the upper-stream component, consisting of machinery and equipment industries. The more concentrated lower-stream consumer goods industries, possessing economies of scale, were able to obtain and assimilate imported technology. Consumer goods quickly increased in technological level and embodied value, with domestic brands catching up to international standards in terms of quality and features. From 1995 to 1999, the output of mobile telecommunications equipment, automatic telephone switching gear, electronic computers, and micro computer systems increased by 64.0%, 125.9%, 479.0%, and 384.6%, respectively.[35] In 1996, the market share of domestic brands in the fields of color TVs, refrigerators, washing machines and air conditioners reached 67%, 99%, 89%, and 64% (Lu 2001).

As the shortage economy ended once and for all in 1998, buyers now had more market power. Consumer demand again became the main constraint on growth. Production capacity for lower-technology products was greatly in excess, while that for higher-quality and higher-technology goods was insufficient (Liu and Wang 2000; Lu 2008). Market-oriented reforms also brought a deterioration of social equity and worsened polarization;[36] this resulted in an imbalance of household consumption, with higher-income families showing a reduced marginal propensity to spend their money on domestic goods, while lower-income families could not afford to consume more (Lu 2004). Restricted by consumption levels, investment growth also began to lose momentum. Local governments were reluctant to make investments, and banks were reluctant to make loans. Fixed capital formation grew by an annual average of 31.0% from 1993 to 1996, but by only 9.3% from 1997 to 1999. Meanwhile, the shock dealt by the Southeast Asian financial crisis of 1998 meant that China's exports experienced negative growth that year for the first time since 1978.[37] In response, the central government in

1998 implemented a super-expansionary macroeconomic policy. This marked the first time in Chinese history that the government had made use of systematic Keynesian intervention, including monetary and fiscal policies. Government direct investment increased rapidly, backed by the issuing of large quantities of treasury bonds. Acting on administrative orders to expand their investments, the SOEs served as a stabilizer, quickly surpassing collective and self-employed enterprises in their levels of fixed capital formation.[38]

The massive investment stimulus, however, did not lead immediately to increased consumption, but caused even greater excess capacity and higher debt levels. The economic growth failed to overcome the constraints on consumption, and the revival between 1998 and 2002 relied heavily on direct investment by the government (Lu 2004). Meanwhile, imbalances also appeared between regions. The coastal areas, home to many special economic zones (SEZs) and benefiting from special policies, grew much faster than areas in the inner land. With favorable policies, foreign investment and export-oriented industries, the southeastern coastal region became China's pole of economic growth, while growth slowed in the central and western regions and in the old industrial areas of the northeast.

4. Improving the Socialist Market Economy: Standardized Mass Production and Mass Consumption, 2002–2011

Although major elements of the socialist market economy had by this time been established, many institutional arrangements remained immature and needed further reform. Moreover, the existing technological-economic system was most extensive in character, and could meet only subsistence needs. Even as China said farewell to the shortage economy and consumption continued to be upgraded, the system could no longer sustain profitable accumulation. The contradiction was shown by the limited effect of the expansionary macroeconomic policies between 1998 and 2002, when government expenditure and investment failed to rally private investment and consumption. Institutional reforms were thus required to renovate the technological-economic system. In 2002 China announced that its goal was to further improve the socialist market economic institution so as to make it more vigorous and open. The methods adopted included completing the institutionalization of markets, broadening the opening to the world, shifting from extensive to intensive growth, encouraging innovation, increasing R&D expenditure, upgrading the industrial structure, pursuing further reform of SOEs, and establishing a new system for managing state-owned capital. As well as speeding urbanization, these reforms created the necessary conditions for China to integrate itself further into global production networks and utilize its comparative advantages. Starting from late 2002, the Chinese economy entered a new period of growth (Lu 2008).

The average annual GDP growth rate from 2002 to 2011 was 10.7%. Between 2002 and 2007, economic growth benefited from both scale and growth rate effects, permitting the longest and most intense boom period since 1978. Economic growth peaked in 2007 at 14.2%, and the economy entered a new stage (Figure 1). In 2011 the annual per capita disposable income of urban and rural residents reached 21,437 yuan and 7394 yuan, respectively.[39]

China's accession to the WTO in 2001 showed that the opening-up had entered the next stage of deep integration into global production networks. During the 1990s, the rapid development of assembly and modular production technologies meant that the world production system rested increasingly on global production networks that involved fragmented production, with development and design staying in the developed world while manufacturing moved to the developing countries. China seized on the chance presented by this wave of manufacturing relocation, and integrated itself into the global production system, developing its processing industries and producing modules for manufactured goods. The strong standardized demand enabled the rapid development of China's foreign trade in these items, which in turn became the driving engine of the "golden era" of growth. China succeeded in integrating itself into global production networks for the following reasons. First, the government persisted resolutely with its strategy of reform and opening-up, the two components of which had enhanced each other since 1978. The opening-up started from a number of cities and special economic zones along the southeastern coast, and spread to other areas. It began with general trade, expanded to include foreign direct investment, and eventually led to integration into global production networks (IIECASS 2008). Second, the surplus elements of the rural labor force, abundant, disciplined, and possessing basic education, were freed up for industrial employment. Basic education in rural areas was a legacy of the planned economy era; by 1978, illiteracy had almost disappeared. As productivity in agriculture increased and the limitations on population flows were gradually lifted, rural workers moved into the cities and to coastal areas, ensuring a supply of cheap labor for industrialization (Xie, Gao, and Xie 2019). The restrictions on the right of rural workers to take jobs in the cities were removed in 2002. In addition, the government invested in the training of the rural labor force, and officially eliminated taxes on agriculture. These measures reduced the burden on the peasants, and released still greater numbers of excess workers (PLROCPCCC 2008; Gui 2019). Third, the increasingly developed industrial system and infrastructure enabled investment to be transformed quickly into productive capacity. By the end of the 20th century, China had established an independent, relatively complete, and coordinated industrial system that encompassed all the industries listed in the United Nations International Standard Industrial Classification of All Economic Activities (Dong 2009). As participation in global

production networks was stepped up, China's foreign trade volume increased dramatically. Beginning in 1995, processing trade outstripped general trade, and from about 2000 expanded quickly (Figure 2).[40] By 2007, processing trade made up around 47.5% of China's total trade volume, compared to a figure in 1981 of only 6%.[41] The increasingly deep involvement in global trade also brought a "learning by doing" effect (Huang 2018), and through helping to upgrade the economic structure, aided industrialization and growth. Meanwhile, the relocation of manufacturing created a strong, continuing demand for labor power in the southeastern coastal region, attracting workers and boosting urbanization.

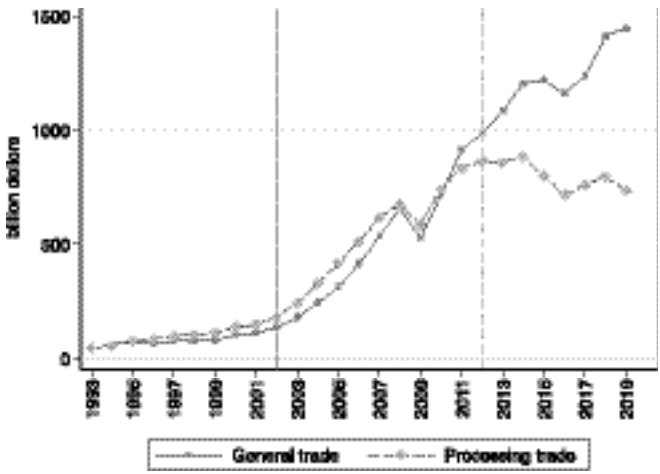

Figure 2 Structure of Foreign Trade of China, 1981–2019

Local governments continued to promote competition between "managerial cities," fostering rapid urbanization. With the unification of markets now largely complete, factors of production became increasingly mobile, making the struggle to secure them even more intense (Tao et al. 2009). From 2004, trading in the rights to use urban land plots underwent reform, with these rights now having to be acquired through open auction. Local governments would purchase, for low prices, agricultural land adjacent to cities or land from old urban plots, and the usage rights to what was to become either industrial or residential land would then be resold. Land sales, now known as "public land financing," soon became the pillar of local government revenues. These sales were used to meet the costs of rapid urbanization, including the establishment of economic zones, new cities, and new districts, and also paid for the renovation of old districts, central business

districts, and so on (Zhou 2012; Li, Chen, and Liu 2012). Investment in infrastructure also accelerated. In 2002 some 81.6% of the total fixed capital formation took place in urban areas, and in 2011 this figure rose even higher, to 97.1%. The growth rate of urban fixed capital formation increased from around 10% per year in the late 1990s to 25.3% in 2011, reaching as high as 30.4% in 2009.[42] Meanwhile, the degree of urbanization of the population increased steadily, exceeding 50% in 2011 and creating a huge demand for urban living space. By this time, the housing policy that from the mid-1990s had seen dwellings signed over to urban residents almost free of charge had ended, and urban housing had been commercialized. The huge demand boosted housing prices and created great opportunities for investment, bringing prosperity to the real estate market (Liu and Sun 2009; Su and Wei 2018). The total value of sales of commercial housing grew dramatically from 0.39 trillion yuan in 2000 to 2.99 trillion yuan in 2007, with the total living space sold also increasing by 300%.[43]

In the first decade of the 21st century, the technological-economic system summed up as "standardized mass consumption and mass production" emerged in China. After becoming integrated into global production networks, China managed to utilize the capital, raw materials, and technology in the global market to produce and process modules, and through its processing trade gained the ability to satisfy standardized foreign demands. The contribution of exports to GDP growth reached 30% in 2007, compared to average figures around 17.4% from 1978 to 1992 and around 19.4% from 1993 to 2001. Together, imports and exports equaled 61.8% of GDP, a figure five times higher than in 1980.[44] The rapidly growing export sector provided many jobs and brought increased wage levels, creating an upward spiral of increased output, higher incomes, and greater consumption. The problem represented by social needs that were not manifested as effective demand was alleviated, and the domestic market came to be characterized by standardized mass consumption. Overall, consumption in this period displayed a significant "wavy" pattern, with massive consumption of cheap and standardized products (Xie, Gao, and Xie 2019). As urbanization proceeded, the structure of consumption shifted from food, clothing, and other necessities to include travel and upgraded housing, signifying an improved quality of life. The demand for housing and private automobiles increased quickly (Lu 2008). Meanwhile, since China was taking part in global production networks by producing and processing modules, it had to meet international standards. As a result, mass production, centered around replaceable parts and streamlined assembly, matured gradually to the point where it matched the demands of standardized mass consumption. The processing trade, automobile manufacturing, and infrastructure and real estate construction developed rapidly, leading to an expansion of capacity in metallurgy, cement, construction materials and other industries. The vertical

division of labor between SOEs and private enterprises contributed to this chain effect (Li, Liu, and Wang 2014). The private firms reacted quickly to consumer demand, expanding capacity by installing new machines and setting up new assembly lines and workshops, while the SOEs were able to meet the increasing demand for means of production through investing in R&D and developing economies of scale. The SOEs also paid superior wages, increasing the incomes of at least part of the labor force (Qi and Kotz 2020). Through coordination between the SOEs and private enterprises, a positive dynamic came into play.

The technological-economic system of "standardized mass consumption and mass production," based on strong foreign demand for standardized consumer goods, on domestic investment, and on mutual reinforcement between upper-stream and lower-stream industries, brought rapid growth between 2002 and 2007. However, the global financial crisis of 2008 almost caused a total economic derailment. In 2009 processing trade and general trade both headed into deep decline (Figure 2), delivering a serious shock to the current technological-economic system and hampering growth. In response, China adopted a super-expansionary fiscal and monetary policy known as the "four trillion plan" (4 trillion yuan of government and induced private investment, and a 10 trillion yuan increment in total credits). The rapidly expanded liquidity enabled China to sustain a growth speed of around 10% per year between 2008 and 2011, and to avoid a hard landing.[45] After 2011, however, the stimulating effect declined; at the same time, the real estate market was experiencing a significant bubble, especially in the key cities of Beijing, Shanghai, Guangzhou, and Shenzhen, and property prices continued to soar despite continual attempts by the government to control them. Excess liquidity gushed into the real estate markets, looking for speculative opportunities. Similar phenomena were observed in other financial sectors such as the stock market, futures, and bonds; all experienced asset price bubbles at some point, though not on the scale of the housing bubble. The fact that the excess liquidity was used only partially for actual investment meant that the problems in the various sectors of the real economy, especially manufacturing, were alleviated only to a very limited extent. Meanwhile, the structural imbalances of China's economy, already too reliant on real estate, were exacerbated. The secondary capital circulation within the financial sector increased the actual costs of the real economy sector and created systematic instability, underlining the severe and now unsustainable imbalance between finance, real estate, and the real economy (PLROCPCCC 2017).

5. The New Normal

China entered its "new normal" in 2012, as GDP growth fell below 8% and continued to decelerate for eight consecutive years, declining to 6.1% in 2019 (Figure 1).

The trend of the revenue on equity of industrial firms from 2002 to 2019 took on an inverse U shape, reaching 9.1% in 2011 and then falling to 5.2% in 2019. The revenue on equity figures for private industrial firms declined faster than those for SOEs, dropping from 14.2% in 2011 to 7.2% in 2018, while the figures for SOEs fell from 4% to 2.8%. As noted earlier, the private enterprises were concentrated in lower-stream areas of industry closer to the final consumption end, and thus faced competition from domestic and international consumers. The deceleration thus showed once again that economic growth was hampered by its dependence on social needs, indicating that the technological-economic system could no longer sustain growth.[46]

Shrinking foreign demand caused severe excess capacity, blocking circulation and triggering a deceleration of the economy. The slowing of exports had three major causes. First, the post-crisis global economy experienced its slowest recovery since the Great Depression. Second, the population had begun to age, the "unlimited" supply of rural labor appeared increasingly depleted, and the constraints exerted by natural resources and the environment were tightening, both contributing to a higher cost of labor for the processing trade. Third, since the processing trade was on a low technological level and alternative suppliers could be found relatively easily, the multinational corporations began shifting their labor-intensive manufacturing operations to other countries with cheaper labor and weaker environmental regulations. The processing trade that had earlier been expanding rapidly fell into stagnation between 2010 and 2018 (Figure 2). Unable to adjust to the new reality in which foreign demand was shrinking rapidly and exports were declining, the processing trade firms cut their investment severely, causing increased unemployment and underutilization of capacity. The depression in the lower-stream operations spread to the upper-stream, causing similar excess capacity in the heavy industrial sector; this proved to be an even bigger problem because of the enormous fixed costs and inflexibility involved. In 2017, the capacity utilization rates of the coal mining and metallurgical industries were 68.2% and 75.8%, respectively, lower than other industries in China. Firms in the coal mining and steel areas had no choice but to keep producing, and were dragged into price wars. PPI growth was negative at one point, and deflation seemed to be an imminent threat.[47]

The deeper roots of this situation lay in the contradiction between social needs, which because of the huge income distribution gap and the absence of a large middle class represented a juxtaposition of standardized and customized goods, and the technological-economic system that could not satisfy these needs. Workers in the export sector faced a "race to the bottom" against workers in other countries; though providing export-oriented firms with an automatic release valve limiting upward pressure on wages, this also allowed informal employment to persist, and slowed wage and income rises, especially for low-income

households. In 2019 a shocking headline showed that 840 million people in China, 60% of them in rural areas, had monthly incomes below 2000 yuan.[48] Because of the low incomes, the needs of this class could not be transformed into effective demand. The ratio of consumption to income was 83.2% for rural residents, compared to only 66.3% for urban residents,[49] indicating that the rural residents had a significantly higher propensity to spend.

Meanwhile, middle- and high-income earners (mostly urban) displayed diversified and customized needs. In 2019 the average number of fridges, TVs, air conditioners, and water heaters owned by urban households was already greater than one, while the number of personal computers and automobiles per household had reached 0.7 and 0.4, respectively.[50] This indicated that among urban residents, the market for durable consumer goods was almost saturated. Nevertheless, the current mass production system could only satisfy the needs of the population for lower-end standardized goods of inferior quality, and the technology that was employed and the way production was organized could not meet personalized and highly customizable needs. As a result, the consumption by middle- and high-income earners included significant quantities of imported products, indicating that these people were capable of purchasing locally made goods but were unwilling to do so. In 2018 China imported luxury goods worth 2 trillion yuan, making up 4.4% of total consumption. Due to higher taxes and anti-corruption campaigns since 2012, consumption of luxury goods within China's borders remained roughly the same in the years that followed, but the consumption of luxury goods by Chinese citizens outside the country kept increasing, and made up 76% of China's luxury consumption overall.[51]

Transforming the current technological-economic system faces many obstacles. Mass production rests on producing specific goods using specialized machines that are costly if used to produce other goods, meaning the sunk cost is high. Meanwhile, in line with mass production, the vertically integrated "M" organization takes time to adapt to a shift to new products. On the other hand, significantly raising labor incomes requires China to change its status in the global production system. To gain a more advantageous place, China must encourage innovation, and shift its industries to the designing of new products. In 21st century manufacturing, the key advantage lies in innovating to produce new components and modules, but China until recent times has relied on importing foreign technology, and has only stressed innovation since 2002. Since then, the increased R&D expenditure has had mixed results, and has been troubled, particularly by the low rate of transfer from research to application and commercial products. China has achieved improvements in some key industries such as electricity, aerospace, telecommunications, and mobile internet equipment, yet still relies heavily on foreign technology and products, and has suffered as a result of this dependence. The

trade war that began in 2018, and the subsequent restrictions on the purchase of cellphone chips, are prominent examples.

The contradiction represented by the excessive supply of low-end products and the shortages of high-end products shows the limitations of the current technological-economic system. Growth in the real economy has been hampered, and the situation of real economy firms is deteriorating. Capital has fled from the real sector and entered the secondary circuit of fictitious capital, creating a dangerous trend. Since 2012, fixed capital formation in manufacturing industries has declined significantly, with the rate of growth falling for five consecutive years from 21.3% in 2012 to a tiny 3.1% in 2017, indicating a reluctance to invest in the real economy.[52] Meanwhile, the financial and real estate sectors surpassed manufacturing in their share of profits in 2008 and have remained at a level of around 60%, meaning that a larger portion of profits is being created through unproductive activities.[53] Even for non-financial and non-real-estate firms, the share of profits from financial activities has increased quickly from 11% in 2011 to 20% in 2019, showing a dangerous trend to financialization.[54]

The upgraded consumption needs and intensified global competition mean that China must further renovate its technological-economic system. The country must seek breakthroughs in key technologies and components, strengthen its capacity for innovation, and increase efficiency in R&D. At the same time, it is essential to utilize information technology to carry out innovation in the organization of production, so that the dynamic pattern of coexisting standardized and customized consumption can be adhered to. The technological-economic model that succeeds the present system might consist of "multi-layer dynamic consumption and intellectual network production." Again, renovation of the technological-economic system is starting with institutional reforms. China is continuing to push for local reforms in a variety of markets, and is also pursuing broader economic strategies, including the so-called supply-side structural reforms, the "Belt and Road Initiative," and also changes aimed at developing the domestic economic cycle. This latter strategy, often seen as a response to rising international economic and geopolitical risks, aims to build a mature domestic market and to expand domestic demand in order to achieve healthier and safer growth that can expand the middle class and increase demand for higher-end products, providing markets for the output of emerging high-technology industries. The supply-side structural reform, though appearing rather vague when first announced, is now achieving its actual goals of limiting the supply of unattractive low-end goods, cutting redundant capacity and excessive inventories, and reducing leverage.

Understood in its narrowest sense, the supply-side structural reform has functioned as an administrative coordination mechanism, as though there were a monopoly organization acting to prevent toxic price wars in some of the industries

that have faced problems. Most notably, it has inverted the trend of falling prices in the coal and steel industries, and prevented possible deflation. The supply-side structural reform has also had the effect of increasing the supply of good-quality mid and high-end products. Further, it has helped increase innovation in key technologies, and has promoted basic science in order to speed the rise of new techniques, industries and products, with the prospect of creating a new driving force of growth. China wants to upgrade its enterprises, especially those in traditional manufacturing industries, and to foster new developments in information technology, so as to effectively supply the new needs of Chinese consumers. The reform also seeks to break down the barriers that limit the flow of factors of production, in order to better channel production, circulation, distribution, and consumption. The domestic market is to be further unified and integrated, with less local protectionism and with increased mobility of goods and factors. In the area of "international circulation," or cross-border trade and investment, China has made the "Belt and Road Initiative" the center of a new landscape of opening-up, pursuing a more active strategy. The flows of commodities, funding, technology and personnel are to be increased. Industrial parks will be set up to enhance foreign trade and international cooperation. China has also focused on the "software" aspects of opening-up, seeking better communication with other countries on markets, rules and standards, and improvements to the institutions of coordination. More free trade zones will be opened in China, and efforts are being made to improve the intellectual support provided for policy making. China is anxious to participate better in global governance, and its reform aims to create a new system of reciprocal international economic cooperation. The overall goals are to nurture innovation, push reforms further, and promote development.

Conclusion

China's rapid development since 1978 has been unique in world history. The country has not only experienced rapid economic growth for four decades, but has also avoided many potential traps and crises. This paper offers another answer to the ongoing debate on how the "China Miracle" can be explained. Most of the current literature suffers from a linear mode of thinking, and interprets China's progress as a single result, while failing to explore the multiple reasons behind it. Employing a historical and dialectical perspective, this paper constructs a dynamic framework based on the contradiction between institutional reforms and technological-economic systems. China's growth is seen as stemming from an ordered, gradual shift of power, during which the institutional base has interacted continually with the technological-economic system (Liu 2020). We argue that the institutional reforms have passed through three stages: the combining of the commodity

economy with planning (1980s); the establishing of the socialist market economy (1990s); and the improving of the socialist market economy (2000s). China has passed through three respective technological-economic systems: quantitative subsistence consumption and extensive production without technological progress; quality subsistence consumption and extensive production with technological progress; and standardized mass production and mass consumption. Economic growth reached a high level in the 1980s, further accelerated in the 1990s, and displayed both scale and growth rate effects in the 2000s.

Since 2012, the Chinese economy has entered a "new normal" that has generated a new pattern of social needs. The current standardized mass consumption and mass production system is no longer capable of supporting growth, and China is facing contradictions in the areas of both peace and development. The contradiction in development bears comparison with the overlap that occurred between the overproduction crisis that followed World War II and the crisis of mass production in the 1970s; this contradiction was resolved domestically at the cost of unbalanced development. More specifically, the imbalance between rural and urban areas leaves room for a strategy aimed at developing the countryside, a process that will absorb overproduction. The imbalance between cities in different regions can potentially be solved through regional coordination. To help rebalance city clusters, intellectual network production can be realized with the help of information technology. The contradiction in national security lies in the "choking" of technology and resources. Restrictions in the field of technology can be resolved through innovation, with enterprises making changes to key components and with research institutes achieving advances in basic science. Restrictions on supplies of key resources can be resolved through improved global strategies.

Meanwhile, China is actively carrying out new policies of reform and opening-up. We expect that a new technological-economic system of "multi-layer dynamic consumption and intellectual network production" will emerge in China in the foreseeable future. Along with further institutional reforms, this will again generate a new momentum of growth.

Notes

1. See http://www.stats.gov.cn/tjsj/sjjd/201901/t20190121_1645944.html.
2. It is worth noting that besides the four representative theories, many scholars have stressed the effects of specific reforms, such as the agricultural reform; the introduction of foreign capital, technology and management; the double-track system; and so on. See Walker (1984), Goldstein (1995), and Fewsmith (2001).
3. Though Lin, Cai and Li (1993) stressed the importance of gradual reform, they were still unable to explain why the rate of growth in China was higher than that in other East Asian countries and regions.

4. As a country that is also home to a rich endowment of labor power, India began shifting to export-oriented labor-intensive industries after 1991. However, China's economy grew faster throughout the 1990s.
5. This is exactly what modern economic growth theory does. Based on the assumption of *homo economicus* and the eternal dominance of the market economy, it tries to attribute economic growth to the growth of factors, such as labor, capital, natural resources, and technology. The policies suggested center on protecting private property, and in line with the principle of comparative advantage, on specializing in areas where endowments are richest. Modern economic growth theory argues that if markets are freed up, economic growth will be the natural result. As a function of wage and profit rates, however, total factor productivity does not represent the actual production process (see Shaikh [1974]; Felipe and McCombie [2013]). "The factors we have listed (innovation, economies of scale, education, capital accumulation, etc.) are not causes of growth; they are growth," North and Thomas (1973, 2) claimed.
6. Investment and exports are limited by consumption. Meanwhile, consumption is dominated by the ruling class, and the needs of the mass of the population are taken into account only after the needs of the ruling class are satisfied.
7. As well as the interactions and feedbacks within the economy, there are also external shocks. However, these shocks are coincidental, and are not decisive for the technological-investment system.
8. The wages of urban workers were strictly controlled. Most of the profits from the industrial sector were used to fund accumulation in heavy industry.
9. Data from China National Bureau of Statistics (CNBS), http://data.stats.gov.cn/.
10. Data from CNBS, http://data.stats.gov.cn/.
11. Data from CNBS, http://data.stats.gov.cn/.
12. Data from *China Statistical Yearbook*, 1984 and 1993. Data are lacking for the period from 1978 to 1980, and the "daily necessities" category listed before 1992 became "household equipment and services" after that. When the announcement that prices would be allowed to "run through the gate" caused severe inflation in 1988, demand for daily necessities reached a peak. It then fell for two years before again beginning to grow.
13. The "old big three" were sewing machines, watches, and bicycles. The "new big three" were color TVs, washing machines, and refrigerators. Those were the major purchases of durable consumer goods in the 1980s and 1990s.
14. Data from CNBS, http://data.stats.gov.cn/.
15. Data from CNBS, http://data.stats.gov.cn/.
16. Data from *China Statistical Yearbook*, 1981, 1983–1993.
17. The tax responsibility system allowed local governments to keep more of the increment of fiscal revenue, meaning that they were no longer completely reliant on the central government.
18. In 1987, for example, the revenue tax and sales tax rates were 65.4% and 60.7%, respectively for large SOEs, 30.7% and 11.8% for small SOEs, and 9.2% and 5.4% for collective enterprises. Township enterprises largely overlapped with the collective enterprises. See Lu (2001).
19. Data from *China Statistical Yearbook*, 1989.
20. China initiated its strategy of opening-up as early as 1978, encouraging foreign investment in the form of joint ventures, located mostly in special economic zones. In 1981, the CPC passed a historic resolution that confirmed self-employment as a necessary supplement to public ownership. In 1988, a revision of the constitution formally legalized private firms. See Wu (2018).
21. Data from *China Statistical Yearbook*, 1993.
22. The contribution of consumption to GDP growth was only 23.8% in 1978, much smaller than the 67.0% of fixed capital formation. Subsequently, however, the contribution by consumption

came to be higher than that of fixed capital formation. Throughout this period, the contribution made by exports was relatively small, less than 20% on average. See CNBS, http://data.stats.gov.cn/.

23. Traditional industries such as food and textiles grew rapidly at first, then slowed down. But the mechanical and electronic industries that were related to durable consumer goods continued to grow rapidly.
24. Due to the priority assigned to heavy industries, the lower-stream firms began from a lower technological level.
25. Multiple campaigns to introduce foreign technology and industrial projects began even before Deng Xiaoping formally came to power, and continued in the 1980s. For example, under the "3000 projects" campaign between 1983 and 1985, China imported 3900 projects with a current global technological level.
26. Data from CNBS, http://data.stats.gov.cn/.
27. Data from CNBS, http://data.stats.gov.cn/.
28. SOEs were concentrated in the upper-stream industries, where the prices of products were subject to controls. SOEs also had to pay a higher tax rate.
29. Calculated from CNBS database, http://data.stats.gov.cn/.
30. Calculated from CNBS database, http://data.stats.gov.cn/.
31. Calculated from CNBS database, http://data.stats.gov.cn/.
32. Calculated from the CNBS database, http://data.stats.gov.cn/. The high inflation around 1994 was considered to have resulted from "overheating" of the economy. Contractionary policies were implemented, lowering both the growth rate and inflation. These moves probably overlapped with the financial crisis of 1998 and contributed to the recession.
33. Data from CNBS, http://data.stats.gov.cn/. Consumption per capita and disposable income per capita are different statistics. Per capita consumption is consumption calculated using the expenditure approach to GDP and divided by population, while per capita disposable income is calculated on the basis of surveys. Here we use the first statistic.
34. See CNBS. 2002. "Remarkable Effects of the Economic Restructuring." [In Chinese.] http://www.stats.gov.cn/ztjc/ztfx/yjsld/200210/t20021008_36050.html.
35. Data from *China Statistical Yearbook*, 1999 and 2000; *China Compendium of Statistics 1948–2008*, tables 1–37.
36. The disparity of income distribution arose mainly in urban areas. A typical high-income family in 1993 earned 3.8 times more than a low-income family, and in 2001 this figure was 5.4 times. The reasons include the bankruptcy of many SOEs and massive layoffs of their employees. See *China Statistical Yearbook*, 1993 and 2002.
37. Data from CNBS, http://data.stats.gov.cn/.
38. Data from *China Statistical Yearbook*, 1999.
39. Data from CNBS, http://data.stats.gov.cn/.
40. Data from *China Compendium of Statistics 1948–2008*, tables 1–52; CEIC, https://www.ceicdata.com/zh-hans/country/china.
41. Calculated based on data from CNBS, http://data.stats.gov.cn/. After 2008 processing trade stagnated, with the growth rate of general trade higher than that of processing trade.
42. Calculated based on data from CNBS, http://data.stats.gov.cn/.
43. Data from CNBS, http://data.stats.gov.cn/.
44. Data from CNBS, http://data.stats.gov.cn/.
45. Calculated from the CNBS database, http://data.stats.gov.cn/.
46. Data from CNBS, http://data.stats.gov.cn/.

47. See CNBS. 2018. "Statistical Communiqué of the People's Republic of China on 2017 National Economic and Social Development." [In Chinese.] http://www.stats.gov.cn/tjsj/zxfb/201802/t20180228_1585631.html.
48. Estimated according to the *China Household Survey 2019*.
49. Calculated from the CNBS database, http://data.stats.gov.cn/.
50. Calculated from the CNBS database, http://data.stats.gov.cn/.
51. See Zhiyan Consulting. 2017. "Analysis of the Status and Future Development Trend of China's Luxury Industry in 2017." [In Chinese.] http://www.chyxx.com/industry/201704/516149.html.
52. Calculated from the CNBS database, http://data.stats.gov.cn/.
53. Calculated from the CNBS database, http://data.stats.gov.cn/.
54. Calculated from the Wind Database of Listed Companies.

Funding

This article is sponsored by the Major Project of the National Social Science Fund of China (Grant No. 21&ZD070).

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