

# Perceiving Truth and Ceasing Doubts: What Can We Learn from 40 Years of China's Reform and Opening up?

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## Abstract

*China's reform, opening up and resultant economic growth in the past 40 years have led to the accumulation of an immense array of experiences, which economists are obligated to look into, analyze and theorize upon. In fact, the rich literature in this area has positively assessed and documented China's successful experiences. However, theories that were established in Western countries have been applied as doctrine to judge China's experiences. By adopting an analytical framework unifying historical logic and theoretical logic, the purpose of this paper is to reveal the unique Chinese experience and its relevance to the general laws of economic development. Based on the experiences of and in reference to research findings about China, this paper chronicles the process of reform, opening up and economic growth, and analyzes the nexus between them. The study demystifies how the incentive mechanism, the factor accumulation and allocation system, market development, and macro policy environment reforms have spurred China's economic growth, structural changes and the increase in productivity. The changes in development stage are examined and policy implications for further reform are discussed.*

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Key words: Chinese economy, demographic dividend, reform and opening up  
JEL codes: O40, O53, P11

## I. Introduction

It has been commonly stated that the Chinese economic reform started in the late 1970s and the early 1980s. Taking two symbolic events as a milestone, one can more specifically mark the year 1978 to be the starting point of the reform.

First, the 11th Central Committee of the Communist Party of China (CPC) held its 3rd Plenum from 18 to 22 December 1978. This meeting re-established the CPC's ideological line of emancipating the mind and seeking truth from facts, and the

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committee decided to shift the focus from political movement to economic development, which laid the theoretical foundation for the reform and opening up.

Second, in the winter of the same year, Xiaogang, one of the poorest villages of Fengyang County in Anhui Province, was determined to abandon the collective production brigade, and became a pioneer for contracting the collectively-owned land to households to work. Such a practice, later known as the household responsibility system (HRS), spread nationwide in the early 1980s and led to the abolition of the People's Commune System that had existed for a quarter of a century. This reform should be considered as the first step away from the planned economy.

China initiated its economic reform and opening-up policy simultaneously. The economic reform has been carried out in the course of opening up, on the one hand, and the opening up has been implemented through the reform, on the other. And the domestic economic development and participation in economic globalization have marched forward hand in hand.<sup>1</sup>

In July 1979, under the initiative of Deng Xiaoping, known as the chief architect of China's reform and opening-up policy, the central government decided to establish "special export zones," which were later renamed "special economic zones," in Shenzhen, Zhuhai and Shantou in Guangdong Province and Xiamen in Fujian Province. This signaled the start of China's opening up to the outside world.

Such an experiment, which was regionally implemented but had nationwide significance in the early period of reform, had successively extended to 14 large cities in coastal areas in 1984, Hainan, the newly established province in 1988, and a host of cities along the Yangtze River and interior border cities in the early 1990s. China has in all directions embraced economic globalization with efforts from its application for the resumption of the status of the contracting parties to the General Agreement on Tariffs and Trade in 1986 to its accession to the World Trade Organization in 2001.

That is, China's reform and opening up have lasted exactly 40 years, from 1978 to 2018. Confucian said: "At forty, I perceived truth and doubts ceased" (Jin, 2005, p. 4).<sup>2</sup> This phrase implies that a wealth of empirical materials accumulated in and a sufficient time span of 40 years can justify the correctness of the adoption of reform and opening-up policy, and help generalize experiences into theory so as to guide future reform.

The rich experiences of the reform and opening up in China have been observed, evaluated, interpreted and generalized by economists, Chinese and international, from day one. While some of the scholarly research focuses on specific aspects of the reform

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<sup>1</sup>The International Monetary Fund considered 1979 as the start year for China's economic take-off (see IMF, 2006).

<sup>2</sup>This is an oft-recounted quotation in *Confucian Analects*.

(e.g. Young, 2003; Brandt and Rawski, 2008), others narrate the overall process of the reform and opening up (e.g. Lin et al., 2003; Coase and Wang, 2012). The findings of Western academics have some major faults in explaining China's reform and opening up. Apart from misreading existing facts and miscalculating future trends because of insufficient information, economists as outsiders have tended to apply mainstream Western theories to judge the experiences in China.

This simplistic application of Western economics to the Chinese experiences causes some misunderstandings. First, some scholars tend to deny the success of the reform and the sustainability of the Chinese growth, repetitively predicting a collapse of the economy (e.g. Young, 2003; Krugman, 2013). Second, others view China's experience as an exceptional case and disregard its general implications for other economies in transition (e.g. Sachs, 2003). Third, whether admitting or denying the success of China's practice, some judge it in accordance with certain consensus based on mainstream economics (say the Washington Consensus). For example, economists in Western countries praise China when they believe that it is adopting capitalist principles or criticize it when they think that it deviates from capitalist principles.

Cheung (2009) boasts of being the first academic to predict as early as 1981 that China would go capitalist and succeed. Huang (2008) generalizes China's reform as a process of establishing capitalism with Chinese characteristics and judges its success or failure in accordance with such a criterion. Based on a similar analysis framework, while highly praising China's reform, Coase and Wang (2012) attribute China becoming capitalist to such reform. They argue that the economic transformation of China is a striking example of what Hayek refers to as "the unintended consequences of human action" (p. x).

By extending conventional dichotomy, namely, the division between natural phenomena independent of human action and artificial phenomena as a result of human design, to a three-fold division, Hayek (1967) coined a distinct middle category: that is, the result of human action but not of human design. Using that lens to observe the reform and opening up in China means ignoring institutional innovations by tens of thousands of participants (e.g. rural and urban residents, entrepreneurs and organizations and their staff) with similar motives and the same goals. Research findings based on the dogmatism (if not history nihilism) can hardly reflect the real orientation and process of China's reform, let alone generalize lessons for would-be learners in other developing and transition countries.

It is true that the reform of the economic system in China was initiated without a clear blueprint, and the goal of the socialist market economy was not established until 1992 when the 14th National Congress of CPC convened. However, with the ultimate goals of the reform being clear, that is, increasing societal productive forces, enhancing

overall national strength and improving people's standard of living, solving problems encountered during the course, pushing forward reform and sequencing between steps of reform have always been intentional. Therefore, an analytical framework unifying historical logic and theoretical logic should be applied to the reform and opening up in retrospect so that the conclusions can be consistent both with facts and logic.<sup>3</sup>

Economic development is a systematic, integrated and dynamic process and not a mosaic simply joined together by elements scattered in time and space. First, the development level and industrial structure in any countries or regions at any time are outcomes of long-term development in the past and the starting point for development in the future. The origin and the previous path determine what it looks like today. The status quo and how one understands the past and the present, however, can determine the future options. Second, since economic development in any individual country is more or less carried out in interaction with the world economy and international politics, lessons learnt from its success or failure can enhance common knowledge on development.

Seeking to solve the mysteries of the rise and fall of nations and finding ways for lagging countries to catch up with their advanced counterparts is the eternal task for economists. As a character in Goethe's *Faust* said, "Dear friend, all theory is grey, but the precious tree of life evergreen." China's reform and opening up represents the largest, most successful socioeconomic change and institutional innovation in human history. It will eventually lead 140 million Chinese people to accomplish their goal of great rejuvenation. That is why economists have, with tremendous enthusiasm, tried to empirically chronicle and theoretically generalize the Chinese experiences of reform. The 40th anniversary of the reform is a great opportunity for those who are interested in mining the rich ore of the Chinese experiences to develop economics theories on development and transition. The time span of 40 years is long enough for them to avoid fragmenting the Chinese experiences. It prevents blindly touching only a part of the elephant and allow elaboration of experiences as a whole, if study is based on sound methodology.

The process of China's reform and opening up is an institutional change with both universal and unique features. Having passed through all phases of economic development and resolving many challenges, one after another, China has become a treasury of experiences of reform, opening up, growth and sharing. Therefore, Chinese economists are obliged to chronicle the events as they happened, to theorize on their experiences, to draw implications for other developing and transition economies, and, at

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<sup>3</sup>Engels (2012) points out, "[T]he point where this history begins must also be the starting point of the train of thought, and its further progress will be simply the reflection, in abstract and theoretically consistent form, of the historical course." The English language translation is quoted from the website *Marx Engels Archive*, available from: <https://www.marxists.org/archive/marx/index.htm>.

the same time, to enrich economic theory.

In reference to existing research findings and based on actual practice in China, the present paper tries to answer the following questions: (i) how and why China missed the opportunity of catching up with the rest of the world in its planning era; (ii) given the initial conditions of the Chinese economy, once institutional constraints are removed, to what extent factor accumulation and allocation can be improved and, thus, the potential growth rate enhanced; and (iii) how the new stage of development is changing China's growth engine, and in what areas and following what approach reforms can proceed to gain new momentum.

## II. Missed Opportunity of Convergence

For countries at a stage of development with very low income and, thus, little potential to catch up with their high-income counterparts, a certain level of physical capital and human capital accumulation can be realized by means of planning if their government holds the power to mobilize resources, especially compared to cases where the market mechanism is adopted in the absence of rule of law and effective regulations. Through planning and administrative means, accumulated capital can be utilized to effectively meet planning objectives, although not efficiently. This was the case when China implemented central planning from the late 1950s to the late 1970s (Brandt et al., 2014).

In 1980 when China was about to abandon the planning system, among 100 countries and regions it ranked 4th last in terms of per capita gross national income (GNI) and per capita GDP. It ranked much higher in terms of major human capital indices: for example, 62nd when comparing average years of schooling for population aged 25 and older among 107 countries and 56th when comparing life expectancy at birth among 127 countries (Cai, 2015).

Although its low per capita income represents a disadvantaged endowment in physical capital, China actually realized a very high level of capital accumulation, as a result of strong resource mobilization ability. In the period of 1953 to 1978, China's average rate of capital accumulation was 29.5 percent, significantly higher than that of the world average and of most developing economies (Lin et al., 2003).

However, a planned economy lacks the necessary institutional conditions for efficient resource allocation and incentives in the workplace. Both cross-nation studies and China's experiences show that a planning system causes allocation inefficiency of the economy as whole. Insufficient autonomy leads to inefficiency of micro activities, and a lack of incentives depresses work efforts.

In the entire planning period of China, production factors (including human

capital) mobilized through administrative forces were not translated into factors driving economic growth, because their potential contribution to the growth was offset by poor productivity. Furthermore, resource misallocation distorted industrial structure and the limited achievements in science and technology were not exploited in sectors relevant to people's livelihood, which impeded the improvement of living standards.

In parallel with the foundation of the People's Republic of China and formation of the planning system, beginning in the early 1950s, China experienced the transition from the demographic pattern of a high birth rate, a high mortality rate and a low natural growth rate to one of a high birth rate, a low mortality rate and a high natural growth rate, which indicates a process of economic involution.<sup>4</sup> That is, the Chinese economy would have, by nature, entered the stage of dual economy development characterized by labor surplus in agriculture, which concurs with the definition by Lewis (1954) and China's situation at that time.

In the late 1960s, fertility began to decline and the natural growth rate of the population decreased substantially, which indicated a gradual formation of a population condition conducive to economic growth; namely, a potential demographic dividend emerged. If the surplus labor were transformed into abundant, low-cost factors of production in the process of industrialization and capital accumulation, such an endowment of factors could have been translated into comparative advantage, and the unlimited supply of labor could have become a factor spurring high speed economic growth.

However, this was not to be the case in reality. A different strategy, that is, a comparative advantage-defying strategy instead of a comparative advantage-following strategy was implemented.<sup>5</sup> A comparative advantage-defying strategy was chosen in seeking the most effective and straightforward means to promote industrialization with the strong desire for catching up with the advanced countries, mobilizing resources under the constraint of an inadequate ability for both accumulation and consumption in an agrarian economy, and replacing market forces for planning under the influence of the prevailing thought of the time.

China's traditional economic system, starting from the late 1950s and implemented in the entire period of the planning economy, can be depicted using a trinity model consisting of macro-policy environment, a planning system of resource allocation and

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<sup>4</sup>Economic history shows that around the end of the Malthusian poverty trap as a stage of development, many countries began to experience a process of economic involution characterized by accumulation of massive surplus laborers in agriculture, followed by entering the stage of dual economy development conceptualized by Lewis (1954). See Cai (2015).

<sup>5</sup>For a definition of the two contrasting strategies, see Lin and Wang (2010); for an analysis of the adoption of the Chinese strategy in the late 1950s, see Lin et al. (2003).

micro-management institutions, under the premise of the implementation of the adopted development strategy (Lin et al., 2003). While the implementation of the development strategy gave impetus to industrialization, the resultant economic system induced a number of defects.

First, the macro-policy environment aiming to give priority to development of heavy industry was formed in the hope of speeding up capital accumulation and industrialization. Because of the distortion of prices of commodities and factors, resources were disproportionately concentrated in heavy industry, the national economy and industrial structure deviated far from its comparative advantage, and the accumulation to consumption ratio was seriously disproportionate.

Second, a highly centralized planning system rejecting the market mechanism was formed for allocating products and factors of production. Although such a system was appropriate for implementing the economic plan, it led to imbalance between supply of and demand for products and misallocation of resources. As a result of the low allocation efficiency, total factor productivity (TFP) performance was so bad that it actually hindered economic growth.

Third, micro-management institutions characterized by nationalization of industry and collectivization of agriculture were established to carry out the national plan and ensuring conformity with the planning system. Lacking operational autonomy and work incentives, those production units, for example, state-owned enterprises (SOEs) and people's communes, operated extremely inefficiently, which is, in part, the cause of the poor TFP growth during the planning period.

In addition, the Chinese economy in the planning period was completely isolated from the world economy. In 1978, the share of total import–export volume in GDP was only 9.7 percent; more than half of exports were primary products. Data on volumes of foreign investment and of foreign direct investment became available in 1983, showing US\$2.26bn for the former and US\$920m for the latter.<sup>6</sup>

Statistical figures, taken individually, seem to show more or less a passable performance of economic growth in China's planning period. According to Maddison (2007), in 1952–1978, the annual growth rate of GDP in China was 4.4 percent, in 1990 international US dollars and at purchasing power parity. However, economic growth in China during that period was not impressive by international standards.

Spence (2011) argues that the global economy started an era of great convergence around 1950. Since the 1950s, many of the lagging economies have caught up with the developed countries. Maddison's (2007) data show that in the period of 1952 to

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<sup>6</sup>Unless specifically noted, the data presented in this paper come from the NBS (various years).



1978, the annual growth rate was 4.3 percent in rich countries and 4.9 percent in other countries, with a world average of 4.6 percent. In 1952, China's per capita GDP was US\$538, which was 8.7 percent of the average level of the rich countries, 46.5 percent of the average level of the other countries, and 23.8 percent of the world average level. With the growth rate of per capita GDP being slower than that of all those groups, in 1978, China's per capita GDP (US\$978 at constant prices) as a percentage of that in these three groups decreased to 6.8, 42.1 and 22.1 percent, respectively. Therefore, during the first three decades of economic development, China missed the chance to catch up with the developed countries and further lagged behind the rest of the world.

If the international comparison of per capita GDP indicates dissatisfaction in terms of people's standard of living and the national strength in China, in-depth analysis can show the severity of the inefficiency of the resource allocation in planned economy.

In 1952, 83.5 percent of total laborers in the country worked in agriculture. In the mid-1960s, the population dependence ratio, namely, the ratio of those working to the dependent population, began to decrease with an overwhelming contribution of the decline in the youth dependence ratio, and thus provided a demographic dividend that theoretically could be translated into growth momentum.

According to the Lewis model and its application to developing countries (Lewis, 1954; Cai, 2016), during the process of dual economy development, having an abundant labor force guarantees sufficient supply of labor and human capital, helps maintain a high savings rate, prevents diminishing return to capital, and generalizes resources reallocation efficiency through labor transfer from agricultural to non-agricultural sectors. Because of the misallocation of resources, as the inevitable result of implementing the planned economy in China, all those factors potentially provided by favorable population dynamics failed to be utilized. The share of agricultural labor was still as high as 74.5 percent in 1977.

Decomposition of per capita GDP growth into its contributive factors can reveal the overall features of the economic growth in China's planning period. According to Zhu (2012), labor force participation contributed 3.63 percent to the annual growth rate of 2.97 percent in 1952–1978, the capital–labor ratio contributed 116.15 percent, average human capital contributed 52.25 percent, and TFP contributed –72.03 percent. Therefore, the poor TFP performance ate into a great part of growth attributed to capital accumulation.

What would the growth be like if China had not adopted the planned economy model? It would be helpful to assume a counterfactual scenario without the traditional system. It is generally known that the “Great Leap Forward” and the “Cultural Revolution” were the most disastrous events during the planning period, and, therefore, the losses caused by them can be considered a reflection of that in the entire period.



According to the study by Kwan and Chow (1996), the labor productivity of the Chinese economy in 1993 would have been 2.7 times the actual figure if those two events had not occurred.

### III. A Brief Review of Reform and Opening up

In general, adequate accumulation and efficient allocation of physical and human capital are prerequisites of successful economic development, which involves dealing with problems of the market mechanism, market signals, efficiency and incentives. Initiating reform of a planning system that is incapable of solving those problems, therefore, requires breaking down a series of institutional barriers.

There are at least three conditions required for carrying out a reform that is feasible politically and practically. First, as a necessary motive to begin, the reform should bring benefits to at least one group of participants: for example, laborers, units or any social members. Second, such benefits should not be obtained at the expense of any other groups of the society. That is, the reform has to be a “Pareto improvement.” Third, the reform should start in a key area to transmit its momentum to other areas of the system.

The early reforms in rural China characterized by the introduction of the HRS and the abolition of the people's commune system rather perfectly met the above conditions. As early as the late 1970s, the HRS was piloted in some poor, remote areas. This spontaneous experiment could be observed not only in Xiaogang Village and Fengyang County but was sporadically seen in poor provinces like Anhui, Sichuan and Inner Mongolia, and was eventually encouraged nationwide by the central government before the 3rd Plenum of the 11th Central Committee of the CPC was convened in the winter of 1978. By the end of 1984, all production brigades and 98 percent of households in rural China had adopted the HRS and, simultaneously, the People's Commune System was officially abolished. This reform immediately improved incentives for production and work in agriculture by granting farmers with autonomy of operation and rights of residual claimants, and rural households have subsequently had the motive and autonomy to allocate factors of production.

In the experimental period before the overall introduction of the HRS, namely, 1978–1984, grain yield per unit area was enhanced by 42.8 percent, total output of grain increased by 33.6 percent, and real agricultural value added grew by 52.6 percent. An econometric analysis shows that 46.9 percent of the increase in agricultural output in the period can be attributed to the introduction of the HRS (Lin, 1992).

In the same period, nominal average income of rural households increased by 166 percent. As a result, the number of rural residents living in absolute poverty dropped

from 250 million to 128 million, with the poverty line rising from 100 yuan to 200 yuan (Cai, 2015). The growth in agricultural products helped mitigate the shortage of supply in urban markets and gradually prepared the country for the abolition of the rationing system, which actually occurred nationwide in the early 1990s. Observers and analysts tend to favor reforms being implemented in rural areas compared to other areas. Huang (2008) argues that reforms in rural areas are more laudable than those in urban areas. In fact, the SOE reforms around the same time were totally compatible with the reforms in rural areas in terms of approach and effect. The reintroduction of the bonus system in SOEs in 1978, aimed to adjust the relationship between employees and enterprises, was the first effort to improve work incentives, followed by the state granting autonomy to and sharing profit with enterprises, which involved the adjustment of the relationship between enterprises and the state. The SOE reform as the core of urban reform has been carried out through the following routes.

First, the SOEs were made viable market players. Starting with expanding autonomy, the reform ended up building a modern enterprise system, through corporatization. The reform of granting autonomy to enterprises was initiated by conducting pilot programs in some cities in the late 1970s; it quickly extended to more regions, and then spread to the whole country in the early 1980s. What followed is the reform characterized by streamlining government and delegating authorities in the 1980s. As a result, SOEs achieved the power to determine the level of wages and bonuses, to hire and fire workers, to purchase and sell commodities, to price products and to utilize their own capital.

In order to institutionalize such experiments, a variety of management forms have been successively introduced, such as manager's responsibility, enterprise contract, asset leasing and shareholding systems. Until the late 1990s, as a more radical measure, the SOE reform of what was referred to as "grasp the big, let go of the small" took place; namely, corporatizing the large-sized SOEs based on the principles of modern enterprise systems and privatizing the small and medium-sized enterprises.

Second, the relationship between SOEs and the government was redefined. Early reform in this aspect was characterized by the state sharing profits with enterprises through a host of measures, such as profit retention, tax for profits and loans for appropriation. These measures all strengthened the accountability of enterprises as market players and altered the way the state managed and supervised the SOEs.

In 1988, the State Council of China established the State-owned Assets Administration Bureau, which was renamed the State-owned Assets Supervision and Administration Commission (SASAC) in 2003. The SASAC, on behalf of the state, is responsible for supervising state-owned assets of the central government's non-

financial enterprises. Similar organizations were established at local level to supervise state assets owned by local governments. The ongoing reform is oriented to strengthen the supervision of state assets to transform the authorized management system of state-owned capital, to establish a number of state-owned capital operating companies, and to assist the transformation of qualified SOEs into state-owned investment companies.

Third, the development of non-public enterprises was permitted and encouraged. With the reforms of the property rights system and to governance structure, the competition between enterprises of different ownership forms and the formation of mixed ownership enterprises have helped to make the SOEs more competitive and efficiency-oriented.

Statistics show that competition between enterprises of various ownership forms has already come into being. As of 2015, of the yearly revenue from principal business of total enterprises with revenue of 20 million yuan and more, only 4.1 percent was generated by those registered as SOEs; the rest (95.9 percent) was generated by enterprises such as private-funded enterprises, limited liability corporations, foreign-funded enterprises and joint ventures.

With the gradual formation of an incentive mechanism of the micro-operational units, namely enterprises and farm households, there emerged a need to get the prices right to ultimately establish their status as market players and give impetus to production factors' mobility and reallocation. That is, the next objective of the reform is to develop markets for commodities and factors.

This includes three transitions: commodities pricing from planning to market determination, product circulation from planned distribution to market trading and factors allocation from rationing through the planning channel to free mobility through markets. All these transitions have been accomplished by means of the "double-track approach"; that is, the transition from the planning track to the market track in an uninterrupted way.

Having gone through those transitions following the logical sequencing, China has gradually established a mechanism and corresponding macro-policy environment by which physical and human capital accumulation can be effectively incentivized and efficiently allocated. Solving problems arising from the process of reform and development has been the pragmatic way to extend reform to wider areas.

What is worth noting is the transformation of the government's function in economic development, and the changes in the relationships between the government and enterprises as well as the market. The overall trend in the entire process of reform is that the central and local governments in China have gradually transformed their roles from involving economic activities directly to promoting social development through providing basic public services. However, motivated by a strong desire to promote economic growth, the local governments in China have fervidly competed with one

another in pursuing the growth of GDP and public revenue.

This entrepreneurial characteristic of government has, indeed, helped translate the motives unleashed by the reform into realistic growth momentum, on the one hand, but has also led to overinvolvement of the government in allocating resources and impeded the role of market forces, on the other. Since the beginning of the second decade of the 21st century, the Chinese central government has been more determined to change its function to providing public goods in areas such as basic education and social protection, as well as focusing on market regulations and macroeconomic policies.

As for China's opening up, it has been closely synchronized and interacted with the domestic reform. That is, the two processes have followed a compatible approach to pushing forward, paralleled in terms of timing, and were mutually conditional in terms of effects. By expanding imports and exports, attracting foreign investment, investing overseas, becoming involved in global governance, and, more recently, implementing the "Belt and Road Initiative," China has participated intensely in the economic globalization and greatly benefited from it. This process has helped China to strengthen enterprises' competitiveness and to adopt advanced technologies and management practices, and has translated the demographic dividend into a competitive advantage in manufacturing.

#### IV. How the Demographic Dividend Has Been Capitalized on

The success of the reform and opening up in China has proven the miscarriage of the prophecy made in accordance with the mainstream economics paradigm. Like the proponents of the Washington Consensus, who designed certain targets for developing and transition economies to reach, economists armed with the neoclassical theory of growth have judged China's reform and development based on a priori dogmas, which inevitably has led to the inability of researchers to provide convincing explanations of and predictions for the Chinese economy.

For example, following a consistent theoretical framework and empirical methodology, Young (2003) and Krugman (2013) criticized the Chinese growth pattern as being overwhelmingly driven by inputs of capital and labor and predicted it to be unsustainable,<sup>7</sup> just as they did for the economic growth in the Asian Tigers in the 1990s. One possible reason those authors have misjudged the performance of the Asian Tigers and Chinese mainland is that they ignored the nature of dual economy development, or

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<sup>7</sup>As Young (2003) bluntly put it, with minimal sleight of hand, it is possible to transform the recent growth experience of China from the extraordinary into the mundane. Out of such a preconception, he negates any significant growth of productivity and its contribution to growth of the Chinese economy.

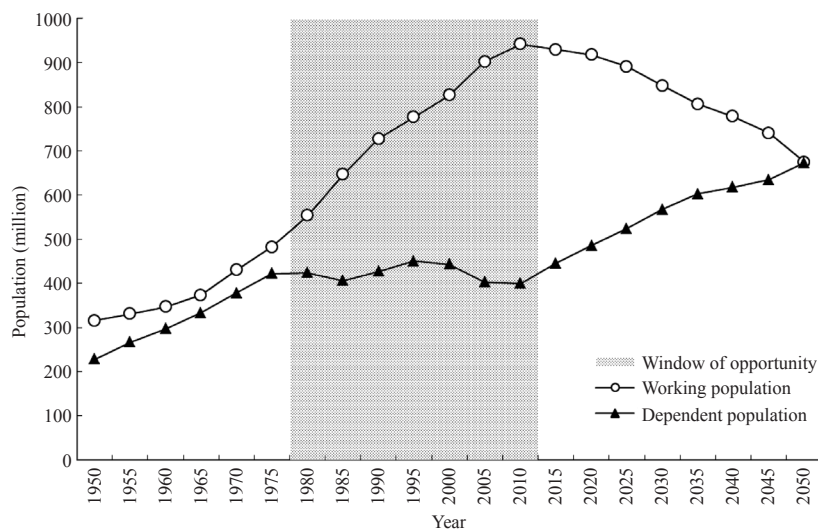
the Lewisian theory completely (Cai, 2016, chapter 1).

In addition, many China observers have failed to recognize the fact that the reform and growth in China are, indeed, an inclusive process. First, improving people's livelihood and strengthening national capacities were the ultimate goals for the leadership to initiate the reform. Second, in the reform period, the economic growth has been accompanied by employment expansion and labor reallocation, which has enabled rural and urban households to share the reform dividends (Cai, 2016, chapter 10).

The China reform and opening up commenced at a time when all the growth potential that the planned economy could mobilize had been exhausted. It is the reform that exploited growth factors existing in the dual economy (e.g. the abundant labor force and human capital accumulated during the period of the planned economy) and created the growth momentum.

By defining the demographic dividend as having a population pattern characterized by growth of the working age population exceeding that of the dependent population, Figure 1 shows the population window of opportunity in which the demographic dividend can be potentially capitalized on, and coincidence of the demographic transition with the period of reform and opening up.

Figure 1. Changing Trend of Population Window of Opportunity, 1950–2050



Source: UN (2015).

Through the lens of this time span and based on economic principles, in what follows, this section reviews some of the research findings on how the demographic

dividend has been translated into a high potential growth rate during China's reform period. If one were not bigoted in a priori theoretical doctrine, he or she could not deny the facts that reform and opening up in the past 40 years have helped to bring about unprecedented inclusive development, and neither should one reject the consistency of Chinese practice with general law.

First, the fact that a low and declining dependence ratio helped to form a high savings rate, and that unlimited labor supply delayed the phenomenon of diminishing return to capital made capital accumulation a main engine of economic growth. The World Bank (1998) finds that capital accumulation contributed 37 percent to China's GDP growth in 1978–1995. Covering a much longer period and with a different model specification, Cai and Zhao (2012) estimate the contribution of capital accumulation to be doubled.

More recent research suggests that TFP enhancement was a significant driver of the economic growth in the reform period (e.g. IMF, 2006; Zhu, 2012), whereas among the factors that increase productivity, capital deepening, or the increase in the capital–labor ratio, has played a major, and increasing, role in China's economic growth (IMF, 2006; Kuijs, 2010).

As can be learnt from the experiences of China and other East Asian economies, however, in the Lewisian dual economy development stage, unlimited labor supply did prevent the phenomenon of diminishing return to capital for a certain period of time. For example, research findings suggest that in most of China's reform period, return to capital investment remained extraordinarily high (Bai et al., 2006), and after the Lewis turning point, characterized by labor shortage and wage inflation,<sup>8</sup> return to capital has rapidly diminished (Bai and Zhang, 2014).

Second, advantageous population factors guarantee the quantity and quality of the labor force to make a significant contribution to economic growth. A sufficient supply of labor has been widely recognized as a favorable factor in economic catching-up. What is often neglected is that the improvement of human capital in the less-developed countries overwhelmingly relies on a favorable age structure of the population that ensures a steady flow of new entrants with more years of schooling (Cai et al., 2016).

The World Bank (1998) estimated the contribution of labor inputs measured in terms of both quantity and quality to GDP growth to be 17 percent in 1978–1995, while Cai and Zhao (2012) estimated the labor contribution to be 8 percent and human capital 4 percent in 1982–2009. By adding together the effect of workers' years of schooling and the effect of education on productivity, Whalley and Zhao (2010) estimate the direct

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<sup>8</sup>Lewis (1954) characterizes the dual economy development as a process of surplus laborers in agriculture shifting to industrial sectors at a constant wage rate. Once labor becomes scarce and the wage rate begins to increase, the Lewisian development stage approaches its end. Such a turning point in time is described as the Lewis turning point. For discussion on China's arrival at the Lewis turning point, see Cai (2015).

and indirect contribution of human capital to be as high as 38 percent in 1979–2009.

Third, labor mobility between rural and urban areas, among sectors and among regions, namely, reallocation from low to high productivity, brings about an increase in resources reallocative efficiency, contributing significantly to TFP growth. In addition to the demographic effect of reallocation, there is also a reform effect of reallocation. Zhu (2012) finds that the sound performance of China's TFP in 1978–2007 can be well explained by the rapid expansion and fast productivity growth of non-state enterprises.

By breaking down TFP growth sources in China into resources reallocative efficiency and residual, the World Bank (1998) finds that the former, namely, productivity growth resulting from labor mobility from low productivity sectors (labor surplus agriculture and labor redundant SOEs) to high productivity sectors (non-agricultural sectors and newly-established enterprises), contributed 16 percent to the GDP growth in 1978–1995. Cai and Wang (1999) find that the labor transfer from agricultural to non-agricultural sectors constituted an overwhelming part of TFP growth and contributed 21 percent to per capita GDP growth in 1978–1998.

In addition, some scholars take the dependence ratio as a proxy variable of the demographic dividend to estimate its contribution to China's economic growth. Since the abovementioned variables all embody the population factor in economic growth, we can view the variable of the dependence ratio as a residual of the demographic dividend. It is estimated to contribute 15 percent to economic growth in 1982–2000 in Wang and Mason (2008) and 26.8 percent in the same period in Cai and Zhao (2012).

The aforementioned empirical findings suggest that the outstanding performance of the Chinese economy has been the result of reform and opening up and making the most of its advantageous growth conditions. Through improving the incentive mechanism in micro management, getting prices right, developing commodities markets, eliminating institutional barriers deterring mobility of production factors, and embracing the world economy for markets, technology and competition, China has translated its demographic dividend into a high potential growth rate and has ultimately realized unprecedented actual growth. Taking into account factors such as accumulation of production factors and productivity growth, Cai and Lu (2013) estimate that potential GDP growth rate was 9.7 percent in 1979–1995 and 10.4 percent in 1997–2010.

Finally, unlike the case in the USA where the involvement in globalization has caused a great deal of job losses,<sup>9</sup> in its course of reform and opening up, China has

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<sup>9</sup>Spence and Hlatshwayo (2011) find that in the period 1990–2008, manufacturing firms in the USA, particularly those at the lower end of the value chain, flowed overseas. As a result, almost all jobs created in this period were attributable to non-tradable sectors. They conclude that offshoring has destroyed the US economy.



witnessed massive expansion of employment, sectoral reallocation of the labor force, and a balanced increase of jobs between tradable sectors and non-tradable sectors. Cai (2017) estimates that total employment in rural and urban areas increased from 402 million in 1978 to 775 million in 2015; the share of agricultural labor dropped from 69.6 percent to 18.3 percent. This employment achievement, which is manifested by changes in industrial structure, improvement in resource allocative efficiency, and increases in labor income, has propelled the Chinese people towards sharing the results of reform, opening up and growth.

Employment-friendly economic development is more likely to be inclusive. Despite a widened income gap in most of the reform period, there have been three effects to help Chinese people, rural and urban, to share the results of reform, opening up and growth, which has, in turn, confirmed the legitimacy of the reform and opening up and created mass demand from domestic consumption.

First is the effect of the increase in labor force participation. The expansion of labor-intensive industries created numerous jobs, which has enabled households in all income groups to participate in the labor market and to increase their income. In the period of 1978 to 2015, GDP and per capita GDP in real terms increased by 29 and 20 times, respectively; real consumption of rural and urban Chinese households on average increased 16 times. The improvement in people's standard of living, in many years, was the result of broadened non-agricultural labor participation rather than higher wages.

For example, Cai et al. (2009) estimate that, in 1997–2004, as the number of migrant workers (defined as rural laborers who worked in cities for 6 months or longer) increased from less than 40 million to over 100 million, without any significant increase in the wage rate, the total volume of wages they earned as a whole grew at an annual rate of 14.9 percent in real terms. As a result, the share of wage income in rural households' income, even underestimated, increased from 24.6 to 34.0 percent.

The second is the effect of wage rate increases. Since the Chinese economy passed the Lewis turning point around 2004, workers' bargaining power in the labor market has strengthened and the wages of ordinary laborers and incomes of low-income groups have risen. In 2003–2016, the average wage of migrant workers in real terms grew at a rate of 10.1 percent. Since 2009, consequently, both the Gini coefficient of residents' income and the income gap between rural and urban households have steadily declined.

The third is the effect of redistribution. Coinciding with the arrival of the Lewis turning point, China's central and local governments have intensified the implementation of a variety of redistributive policies. Those efforts include strengthening the implementation of the poverty alleviation program in rural areas, expanding coverage and equalizing provisions of public services, constructing labor market institutions

and relaxing the household registration control over population migration (Cai, 2016, chapter 11).

## V. New Development Stage and Unfinished Tasks

A thorough review of China's reform, opening up and growth helps us better understand where the Chinese economy stands and what reforms ought to be carried out next. Many economists hold that in the past 40 years, China has made two important transitions: the transition from planned economy to market economy in terms of the economic system and the transition from dual economy development to neoclassical growth in terms of the growth phase. In fact, along with those two transitions, China has also undergone a rapid demographic transition, first from a high fertility phase to a low fertility phase, and a prolonged very low fertility phase. This transition has significant implications for the sustainability of China's economic growth.

In the past 40 years, China's economic reform and opening up have created a necessary institutional environment in which demographic dividends embedded in factors that potentially spur economic growth have been translated into the extraordinary performance of the Chinese economy (Table 1). Incentive mechanism, enterprise governance structure, price determination, resource allocation system, trade and foreign investment regime and macro policy environment reforms have all been initiated in response to unique tasks arising from the stage of development.

Table 1. Summary of Growth Sources and Their Trends

Growth factors	How they worked	Features and implications
Capital accumulation	Low dependence ratio conducive to high savings; unlimited supply of labor prevents diminishing return on capital	Unsustainable; as labor becomes scarce, return on capital begins to diminish
Quantity of labor	Population structure guarantees labor supply, which turns into comparative advantage of manufacturing	Unsustainable; as demographic dividend disappears, economy passes Lewis turning point
Human capital	Education expansion and mass labor entry improves quality of stock of workers	Education expansion tends to slow down, calling for enhancing its quality and equality
Total factor productivity	Overall result of improvement of incentives and reform of resources allocation system	Increasingly important to sustain growth; it requires to be increased through new ways
Of which:		
Reallocation	Resources reallocate efficiency through labor mobility from agriculture to industrial sectors	Dominant source in early stage of development; it diminishes after Lewis turning point
Technology	Utilization of advantage of backwardness through absorbing foreign technology and management	As gap narrows, technological progress increasingly relies on independent innovation
Population factor	Widely defined demographic dividend is manifested in all factors driving fast growth	It's diminishing as China ages; there is still a second demographic dividend

By the same token, the emphasis, the new impetus and the way to push forward in further reform also need to be reoriented in accordance with the change of development stage. First, as China transitions from an upper–middle income status to high income status, its growth pattern ought to transform from reliance on factor inputs to reliance on productivity enhancement. Second, as the economic reform aimed to establish a market system approaches its final phase, there tend to be more difficulties.

As shown in Table 1, after the Chinese economy passed through the Lewis turning point characterized by labor shortage and wage inflation, the demographic dividend has rapidly diminished; all factors that previously drove the fast growth have weakened. As a consequence, the potential growth rate is bound to decline and, thus, the speed of growth of the past three decades will not continue.

Thus far, several forces that drive down China's potential growth have been observed. First, labor shortages are boosting wage increases too quickly to be supported by labor productivity growth. Second, the rapid rise of the capital–labor ratio is leading to a sharp decline in return to investment. Third, the shrinkage of new entrants to the labor market is slowing down the improvement of human capital. Fourth, the deceleration of the labor shift from agricultural to non-agricultural sectors is attenuating resource reallocation efficiency, resulting in a slowdown of TFP growth. Therefore, China's potential growth rate is bound to fall.

Cai and Lu (2013) estimate China's potential growth rate to be reduced from about 10 percent in the period prior to 2010 to 7.6 percent in the 12th Five-year Plan period (2011–2015) and 6.2 percent in 13th Five-year Plan period (2016–2020). Pritchett and Summers (2014) argue that any growth exceeding the world average is abnormal, and, therefore, the rate will regress to the mean eventually. Nevertheless, Cai and Lu (2016) suggest that the decline of China's potential growth rate will be smooth and slow, and until 2050, it will remain at a level of higher than 3 percent. The actual growth rate and its slowdown in pace have so far followed this predicted trajectory.

According to growth theories and nations' experiences, in the transition from the dual economy development with potential of catching up to the neoclassical growth at the technological frontier, a growth slowdown is inescapable (Eichengreen et al., 2013; Barro, 2016). However, at what pace potential growth falls and to what extent the actual growth rate deviates from its potential rate may differ and lead countries to different scenarios (Eichengreen et al., 2011).

China will not be exempt from the iron law of regression-to-the-mean in the long run. However, by deepening reform, upgrading industrial structure and transforming its growth pattern, China can prevent its potential growth rate from falling too fast and maintain a reasonable actual growth rate so that it will avoid falling into the middle-

income trap and accomplish its goal of modernization.

Some studies show that whether or not reform can be advanced makes a great difference in terms of future economic growth. For example, taking the periods of 1966–1975 and 1978–2012 as representative scenarios with and without reform, respectively, Cheremukhim et al. (2015) determined that in 2050, they would be substantially different. Research also suggests that there is not a trade-off between reform and growth and that reform can spur growth.

Generally speaking, faced with an economic system characterized by lack of incentives and inefficiency, starting by improving incentives, reform can be carried out to enhance efficiency. Because some of the participants in the reform benefit from the efficiency gain and no others lose from it, such a reform can be said to offer a Pareto improvement. For some time, that is how it has worked as far as China's reform is concerned. However, as the reform deepens, the low-hanging fruits tend to be harvested, and there have been fewer and fewer opportunities for carrying out a reform that benefits some people without making any others worse off.

As a consequence, reform in China faces several new challenges. First, when reform enters those areas where existing vested interests need to be adjusted, it faces resistance and interference from vested interests. Second, in the course of creative destruction necessary for tapping the new sources of growth, some workers will become vulnerable in the labor market and enterprises will find it more difficult to survive. Third, as the cost-bearers of the reform are not necessarily the beneficiaries of the same reform, there emerges an incompatibility of reform incentives. To tackle those challenges, reform dividends, namely, the added potential growth rate generated by reform measures, should be shared to make reform a Kaldor improvement.<sup>10</sup>

This requires political determination to firmly advance the reform and political wisdom to skillfully tackle the problems encountered in the reform. Policy measures include redefining the responsibilities of fiscal expenditure between central and local governments, strengthening social protection of workers laid off from previous jobs and families who are demographically disadvantaged, and compensating the losers from the reform.

The experiences of the Chinese reform show that the reform dividend will spur growth momentum and improve people's livelihood after all. Cai and Lu (2016) examined the positive impacts of reforms of the household registration system, SOEs, population policy, and the education and training system on enhancement of the labor force participation rate, TFP growth, increasing the total fertility rate, human capital

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<sup>10</sup>A "Kaldor improvement" refers to a change in which the total gains outweigh the total losses so that it is possible for beneficiaries, maybe through government, to compensate non-beneficiaries for the losses they suffer. As a result, no one suffers in the end. See Kaldor (1939).

accumulation and strengthening of enterprises' competitiveness, and found all factors increase the potential growth rate. It is of importance to legitimately split the costs and share the dividends of the reform among all participants.

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