The Contribution of China's Rural Reform to Its Rapid Economic Growth

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It has been four decades since China's reform and opening up was initiated at the Third Plenary Session of the 11th Central Committee of the Communist Party of China (CPC) in 1978. Over this period, China's economy has boomed with an average rate of 9.6% in its annual GDP growth, bringing remarkable improvement to Chinese people's living standard. As is well-known, China's economic reform began from a rural reform characterized by the household responsibility system, but the influence of this rural reform goes far beyond the economic sphere. Given this, it is important to understand the way rural reform has contributed to China's reform and opening up as well as its overall development and achievement sharing, so as to draw lessons from the reform and tell the story of China that offers wisdom and solutions.

The reform related to "agriculture, rural areas and rural people" covers many fields. It is a worthy subject of

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economic research and an inspiration for economic studies. In economics, development economics in particular, theories have been developed in issues such as tenancy agreement, industry evolvement, dual economic structure and labor mobility, but none of them has been thoroughly examined and tested empirically. In this regard, China's rural reform has provided an unprecedented empirical basis to those theories—a great contribution to development economics.

In my previous research, I examined the whole process of labor resources exiting from low-productivity sectors, flowing between urban and rural areas and across regions and industries, and ultimately into the urban high-productivity sectors. From this perspective, I have illustrated how reform has translated economic drivers into fast economic growth. This paper will, given the declining share of agriculture in China's economy, give a full review of the process and results of China's rural reform from how the reform has created surplus labor that finally exited from the low-productivity agricultural and rural sectors, with a view to sum up the implications of the reform in the light of development economics and provide suggestion for policymakers on China's reform and development further down the road.

Decline of agricultural share as a result of development

Discussion about the role of agriculture in economic development in economic literature has been on the wane for some time. Early classic literatures mostly look at agricultural contributions to economic development from the lens of

resource transfer, which, according to some scholars, could be categorized into: (1) farm produce, (2) a potentially big market as a result of the large rural population, (3) labor force, (4) capital and (5) foreign exchange reserve. And by extension, the land transferred from farmland to industrial and urban land as a result of the raised agricultural productivity also counts as a contribution. These are the factor contributions of agriculture to the overall economic development—some were significant back then and some remain essential even today.

Before reform and opening up, for the purpose of prioritizing the development of heavy industry and implementing planned economy, the combination of state monopoly for purchase and marketing, people's communes and the household registration system bound rural labor to agricultural production, restricting the mobility of a great amount of accumulated surplus labor. This has hindered agricultural contribution to labor supply. Since reform and opening up, surplus labor has transferred on a massive scale: The working population leaving the countryside for urban jobs rose from 38.9 million in 1997 to 172 million in 2017, now accounting for over one third of urban employees. Apart from that, over 100 million rural residents are employed in local non-agricultural sectors. In 2017, a total of 280 million rural laborers either transferred to local non-agricultural industries or left their hometowns, which has satisfied the huge labor demand of the non-agricultural industries.

In times of planned economy in China, faced with extremely low agricultural productivity in rural areas and

unmet demand for basic living necessities of hundreds of millions of rural residents, the Chinese government still managed to transfer capital from countryside to cities, and from agriculture to industry, through methods such as price scissors differential between industrial products and agricultural produce as well as agricultural taxes. Various estimates by economists suggest that, over the decades of planned economy, the state has taken from agriculture a total of RMB600–800 billion in revenue, which has been funneled to the industrial sector. Long after the reform, the one-way transfer of resources from the agriculture and rural areas to the non-agricultural sector and urban areas has continued. According to estimates by scholars, between 1980 and 2000, a surplus capital of RMB1.29 trillion, calculated at the constant price of the year 2000, was collected from agriculture through various means for industrial development, and the capital transfer from rural to urban areas was around RMB2.3 trillion.

Similarly, for a long period of time, agricultural, forest, husbandry and fishing products have figured prominently in export. They had accounted for over 20% of China's total exports till 1990, excluding primary products such as fossil fuel, lubricating oil and related raw materials. This was a significant contribution to China's then-meager foreign exchange reserve.

With increased agricultural productivity, more and more farmland was transformed for non-agricultural purposes through industrialization across China. The trend is not obvious by only looking at the changes in the acreage of

China's farmland. According to statistics, the domestic farmland in 2016 had even increased by 36.56 million hectares, or 37.2%, compared with that of 1983, an increase that was actually caused by statistical caliber. Figure 1 shows that in the first and second national land surveys, the figure soared in 1996 and 2009 respectively. However, the number has kept dropping after the adoption of each new statistical caliber. For example, between 1983 and 1995, the farmland had shrunk by 3.386 million hectares, down by 0.29% year on year; between 1996 and 2008, the farmland had reduced by 8.323 million hectares, down by 0.55% year on year; and between 2009 and 2016, the decline was 464,000 hectares, down by 0.05% year on year.

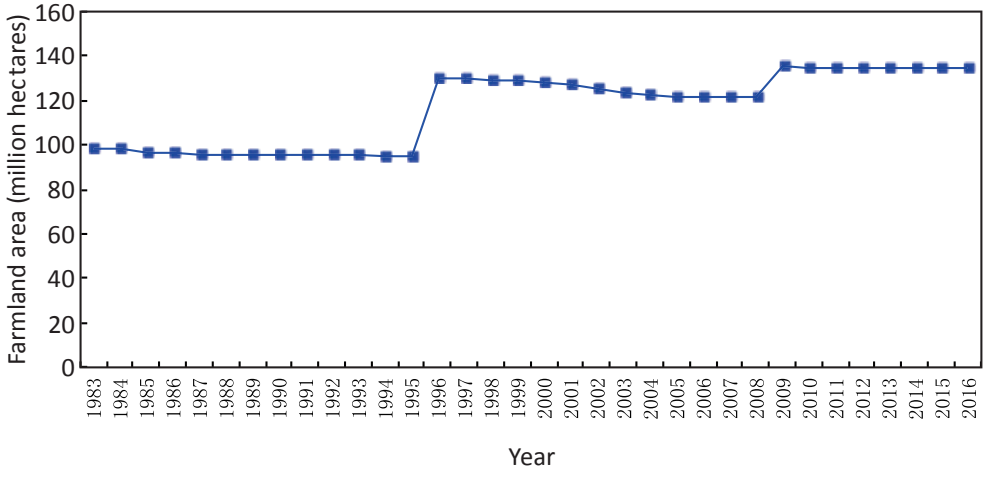

Figure 1 Changes of domestic farmland area
Source: Retrieved on August 1, 2018, from CEIC, http://www.ceicdata.com

However, the summary above centering on the factor contribution of agriculture is not enough for an accurate

understanding of rural reform's contribution to economic growth. Such contributions still reflect the priority for the development of cities or industry in policies that require reform per se; moreover, these contributions are bound to wither away and eventually disappear due to a declining agricultural share and other factors, making a false impression seems that agriculture and rural areas will no longer make remarkable contribution to the economy.

First, the number and proportion of rural laborers has plummeted as a result of surplus labor transfer. For years, as most young rural laborers choose to find a job in urban areas, the farmers are gradually aging and the number of young farmers in rural areas is decreasing. In 2014, the rural population aged 16–19 peaked before it dropped. Due to the irreversible demographic transition, the labor force supplied by the agricultural sector to the economy will decline and even disappear.

Second, the capital provided by the agricultural sector to economic growth will also be gone, as a result of the increasingly fair exchange between industrial products and agricultural produce, more support for agriculture and a dropping proportion of the agricultural value added in national economy. Marked by the abolishing of agricultural tax in 2006, the government started to implement policies of "giving more and taking less" and "cities supporting countryside and industry nurturing agriculture." Meanwhile, exports of agricultural, forest, husbandry and fishing products are already negligible, rendering the farm sector's contribution to foreign exchange reserve too little to be

noticed.

Third, as an important measure to safeguard food security, the central government has implemented the toughest policy for farmland protection by drawing a "red line" for its arable land and basic farmland, leaving limited room for land transformation to non-agricultural purposes and thus limiting the land contribution by the agricultural sector to economic growth. As is shown in Figure 1, the decline in farmland area has become much smaller since 2009.

In development economics literature, economists such as Lewis emphasized the changes brought by agriculture to the economic structure, in addition to its contributions to economic development in terms of capital and labor factors. Behind the structural change is the ever-improving labor productivity, a discovery by Kuznets, and so the term "Kuznets Process" was created by Aoki Masahiko to refer to the change in industrial structure symbolized by the transfer of agricultural labor and its falling share in the total labor poll.

The structural change is essentially characterized by a long-term decline of agriculture's share in the total output and employment, a consistent phenomenon throughout the whole process of promoting economic development and benefits sharing by reform and opening up. Figure 2 shows the trend of the contribution by the three industries to economic growth. Since the 21st century, the agricultural value added has contributed to no more than 5% of the GDP growth, which is in line with economic theories and previous experience.

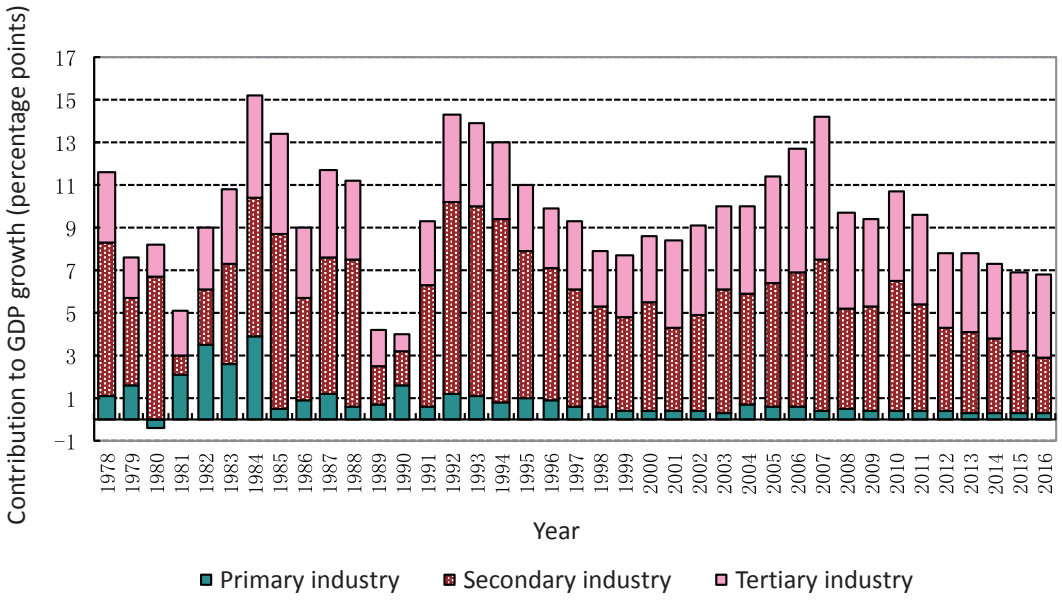

Figure 2 Changes of the contribution to GDP growth by three industries
Source: National Bureau of Statistics of China, Retrieved on July 21, 2018, from http://data.stats.gov.cn/easyquery.htm?cn=C01

After the decrease of the share of agricultural output in the economy, the share of agricultural labor in the overall labor poll has also decreased, falling from 70.5% in 1978 to 27.7% in 2016, according to the data provided by National Bureau of Statistics of China. The proportion may have dropped by another 10 percentage points based on my research results.

Reform and opening up, and development and achievement sharing, are two processes that bear a causal relationship in which they condition and reinforce each other. On the one hand, reform has removed the institutional barriers, allowing labor to exit from the low-productivity sectors, flow between rural and urban areas and across regions and industries, and enter the urban high-productivity

sectors. Thus it makes the decline of the agricultural share in the economy a real Kuznets Process. A series of measures adopted in rural areas or rural reform enable surplus labor's exit from agriculture and countryside. On the other hand, the decline of the agricultural share has led to higher employment rate and productivity, so reform and opening up has not only boosted economic growth, but also promoted the wide sharing of the benefits.

How have rural reform created conditions for exit?

The household responsibility system has been widely carried out since the early 1980s. It is often called "contracting output quota to each household," or more accurately, "contracting workload to each household" ("Dabaogan" in Chinese). Both terms refer to the way the collective farmland was contracted to each household based on its number of family members and workers, and output requirements set for each contracted rural land with no more collective labor or interference with production. The difference is that under the "Dabaogan" mechanism, farmers can directly retain the remainder of their farming output after paying agricultural taxes, completing tasks for unified government purchase and submitting a designed share to the collective unit, so there is no more unified allocation by the production team. The household responsibility system was eventually implemented throughout China in the form of "Dabaogan."

Based on economics notions that already have mature analysis frameworks, "contracting output quota to each

household" is more of a "share tenancy" policy that only allocates parts of the additional output (based on a fixed ratio) to contractors, while "contracting workload to each household" resembles a "fixed rent" policy that allows the contractors to have all the remainders of the additional output. Previous research has concluded that the latter policy could provide a more incentive to production activities.

Therefore, The effectiveness of the household responsibility system are mainly owed to the practice of granting claimants right on residual to farmers in a straightforward way, or in colloquial expression, "(a farmer) can get all the rest once she/he has submitted her/his share to the country and the collective unit." Thus it generates significant incentive to farmers and largely increases agricultural productivity. Early documents gives an authoritative explanation for the reform and estimates its quantitative effects. However, this reform, were it limited to its incentive effects, would only mean returning to the production possibility frontier and produce a one-off effect in promoting agricultural output and economic growth. By doing so, the macro contribution of rural reform is greatly underestimated and the logical relationship between the subsequent and the initial reform efforts is ignored.

In fact, when farmers were entitled to claimants right on residual, i.e., the right to dispose the remaining output produced by their additional work, they could, as the reform further deepened, gradually gain the right to allocate the factors of production at their own will. After the introduction of the land contracting policy which although originally

required "dual operation" by farmers and production teams, the purchase of the means of production, labor input, allocation of labor force and time were actually decided by farmers themselves. Increased work incentive and labor productivity increased the output and reduced the time required for each unit of land (Figure 3), exposing the hidden surplus labor. So it can say that only when farmers obtained the right to allocate the factors of production can they exit from low-productivity sectors.

Judging from the ultimate reform results, while the incentive mechanism played a critical role at the early stage in motivating farmers and increasing agricultural output, farmers' right to allocate the factors of production had a

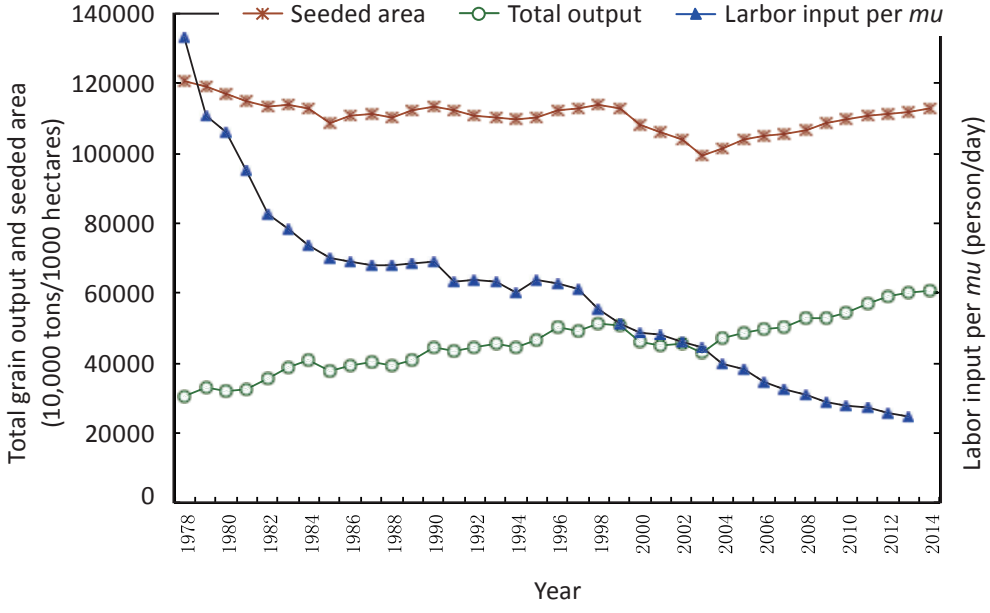

Figure 3 Changes in total grain output, seeded area and labor input
Source: National Bureau of Statistics of China, Retrieved on July 21, 2018, from http://data.stats.gov.cn/easyquery.htm?cn=C01

more profound influence on economic development.

The introduction of the household responsibility system has increased individuals' productivity, exposing the surplus labor and low marginal productivity, driving the exit of labor force from agriculture. However, the exit is a phased process, from grain production to diverse cultivation-related businesses, to comprehensive agriculture, forestry, husbandry and fishing industries, and to township enterprises, small towns and cities of all levels. Such an exit must have been driven by reform in other aspects given the one-off impact of the household responsibility system.

In fact, decision makers and scholars have noticed the stagnant growth in agricultural production and such a one-off effect on farmers' income. From 1980 to 1984, as the household responsibility system was promoted widely, the procurement prices of agricultural produces shot up as never before (e.g., up by 22.1% in 1979). This has stimulated the total grain yield to grow at an average of 2.2% annually despite the sharply shrinking number of agricultural laborers and seeded acreage. In the following four years, however, even though the number of agricultural laborers and seeded acreage had remained stable, the total grain yield had declined by 1.8% per year on average (Figure 3). The changes that occurred following the one-off effect have revealed the characteristics of the reform at that time.

In the late 1980s, researchers proposed "Rural Reform Step Two" to tackle the situation, and various approaches were tried and many government policies were issued. However, none of these attempts and experiments has an

impact as strong as the household responsibility system, thus failing to attract wide attention for academic research, and some of them have even been forgotten.

Therefore, all of these efforts were local trials designed to further increase farmers' income. They were recognized and encouraged by governments at all levels to safeguard steady agricultural growth. Historically, many of these attempts have provided prototypes for today's reform. I will explain this through the example of land system reform.

Under the household responsibility system, the farmland was allocated to each household based on its number of family members and workers, which were given different weights. Due to insufficient land resource for every worker in rural area, the land was divided into small pieces for cultivation. To ensure fairness, land of different quality was cut into even smaller fragments to make up a similar mix for each family.

The emergence of the agricultural surplus labor came along with an increasing pressure for labor transfer and the need for economies of scale, generating a demand for land transfer—a new system. At that time, this demand was meant to help achieve scale operation, or rather to create conditions for the exit of surplus labor.

Back then there were mainly two forms of system innovation. One of them was through negotiation between households over transfer of contracted land, which meant, in essence, the transfer of the rights (claimants right on residual) and duties (paying taxes, accomplishing tasks for unified government purchase and submitting a share to the

collective unit) related to the contracted land. In different areas, therefore, land "prices" were set based on the related rights and duties. The other form was the reallocation by the collective unit owning land management rights, with "two-land-type mechanism" as an epitome that divided land into "grain ration farmland" and "responsibility farmland," the former being allocated based on the number of members and laborers in each household and the latter being managed at scale through bidding.

It is evident that the reform to promote land transfer started quite early, and has continued with the ongoing transfer of agricultural labor. So far, land transfer is more optimized and diversified in its forms, larger in its scale and wider in its scope. To further promote land transfer and realize effective allocation of land, since the 13th Five-Year Plan, much has been done to separate the ownership rights, contracting rights and management rights for contracted rural land. As of the end of June 2016, 70 million (near 30% of the 230 million in total) rural households in China have been involved in land transfer. The proportion even exceeded 50% in developed coastal provinces.

Labor reallocation and its impact on the economy as a whole

It is widely believed that, at the early stage of rural reform, as the agricultural output or agricultural value added had grown faster, it had accounted for an increased share of the national economy. This is actually a superficial phenomenon caused by the price increase of farm produces. If the price

factor is excluded, the share of agricultural output in the national economy actually has not risen at all. That is to say, from the very beginning of the reform, the agricultural share has been going down, accompanied by the reallocation of resources.

Figure 4 shows the average annual growth rates in the value added of the planting industry, the forestry/husbandry/fishing industry, the secondary industry and the tertiary industry, with the data converted into 3-year average growth rates. The planting industry and the forestry/husbandry/fishing industry are weighted according to the share in the agricultural output and estimated based on their added value to the primary industry. According to Figure 4, from the late 1970s to the early 1980s when the household responsibility

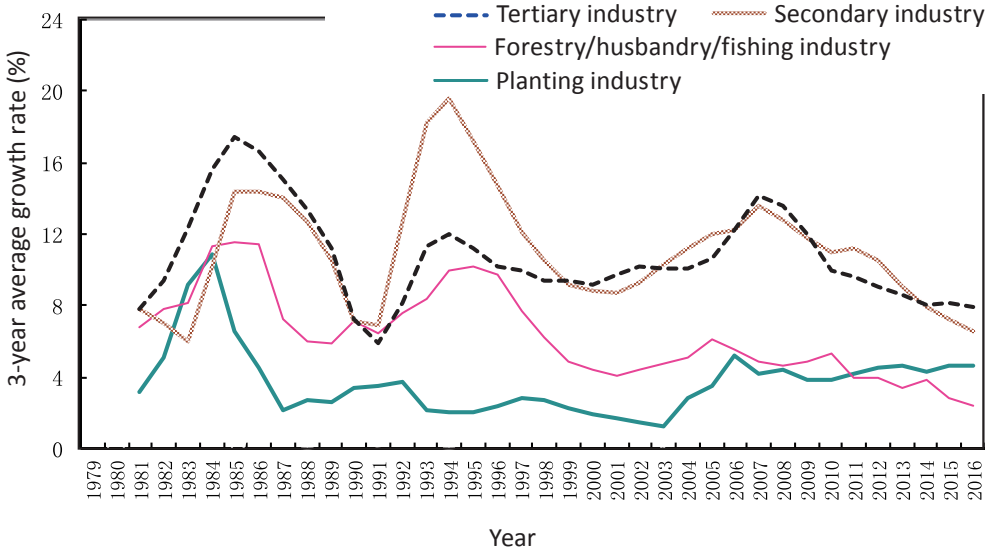

Figure 4 Growth in the value added of all industries
Source: National Bureau of Statistics of China, Retrieved on July 5, 2018, from http://data.stats.gov.cn/easyquery.htm?cn=C01

system was promoted, the agricultural value added once climbed fast, but not as fast as those of the secondary and tertiary industries. The growth rate comparison among the three industries suggests the following features.

First, the planting industry is the first to decline after its growth, and reached the bottom two years earlier than the forestry/husbandry/fishing industry (1985 vs. 1987). This means, the forestry/husbandry/fishing industry had accommodated the surplus labor from the planting industry before non-agricultural job opportunities were created. As the number of rural non-agricultural jobs increased, the proportion of rural laborers employed in the agricultural/forestry/husbandry/fishing industry has plummeted since 1985, at a time when the development of township enterprises hit its peak.

According to National Bureau of Statistics of China, township enterprises, which accounted for less than one fourth of the total rural output in 1978, have developed rapidly for a decade and reached 52.4% in 1987, exceeding the agricultural output for the first time. Another data resource shows that from 1980 to 1985 and from 1985 to 1990, the industrial output of township enterprises, calculated by nominal growth, increased 2.59 times and 2.31 times respectively, while the figures of State-owned enterprises during these two periods only increased by 60.95% and 1.07 times respectively. By 1993, township enterprises had accounted for a slightly larger share of the

total industrial output than State-owned enterprises. After that, the ownership has taken a more diversified form, thus further promoting the development of non-public economy.

Second, regarding growth trend, the forestry/husbandry/fishing industry differs from the planting industry in growth changes, but resembles the secondary and tertiary industries, indicating that, with the agriculture's share in the economy declining, agriculture underwent an readjustment of industrial structure within itself, starting from the adjustment of resource allocation emphasizing grain production and the planting industry. After 2003, a year when China's economy reached the Lewis turning point, the labor-intensive forestry/husbandry/fishing industry suffered from a more severe labor force shortage that weighed down its output growth, resulting in its annual growth rate similar to that of the planting industry once again.

Third, from the beginning of reform, the readjustment of industrial structure, characterized by the declining share of agriculture in economy, has already started. The secondary and tertiary industries have enjoyed faster growth in value added than the primary industry, especially after 1992 when Deng Xiaoping delivered critical speech during his visit to south China. The significant change of the secondary and tertiary industries over the primary industry is reflected in their trends of growth and employment. The result is a continuous decline in the agriculture's share in the total output and employment.

This change in the industrial structure, a Kuznets Process, has raised the production efficiency through resource

reallocation, making a huge contribution to productivity during reform and opening up. According to an analysis of the overall productivity between 1978 and 2015, the increased productivity of the three industries jointly accounted for 55.1% in the overall economy, while the labor transfer to the non-agricultural sector contributed 44.9%. The effect of resource reallocation has not shown any declining trend as of now, which still accounts for 33.1% in the economy till 2004–2015.

Conclusion and prospect

Along with the rapid economic growth during reform and opening up, the share of agriculture in the economy has been decreasing, a prominent phenomenon that led to great changes in the way agriculture contributes to economic development—the role of factor contribution is reduced, and resource reallocation characterized by labor transfer has become the major way of contribution. This Kuznets Process and its related reform took place right when the surplus labor exited from the low-productivity sector, flowed between urban and rural areas, across regions and industries, and eventually entered the high-productivity urban and non-agricultural sectors. The main purpose of rural reform during this period is to create incentives and mechanisms for surplus labor to exit from low-productivity agricultural and rural industries.

The potential for China's rural labor transfer remains huge, so the rural reform aimed at releasing surplus labor is far from completion. As the unfinished reform is holistic and

systematic in its nature, I believe that, following the logic of this paper and in the spirit of solving real problems, defining rural reform on the basis of labor exit could help focus efforts on the urgent issues and shed light on future priorities.

Under the rural vitalization strategy proposed in the report of the 19th National Congress of the CPC, policies and related implementation methods were introduced for modernizing agriculture and rural areas, which are to be characterized by urban-rural integration and driven by reform. The strategy is advantageous in that the solution of the issues relating to "agriculture, rural areas and rural people" is attached to the long-term sustainable development of China's economy. Therefore, scaling up agricultural operation and enhancing agricultural productivity, in order to further create conditions for the exit of agricultural labor from low-productivity sectors, also counts as an implementation method of this strategy.