

# A Counterfactual Analysis on Unlimited Surplus Labor in Rural China

Fang Cai, Meiyan Wang \*

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## Abstract

*Using a counterfactual analysis approach, the present paper examines a host of conventional wisdoms relating to issues of farmer, the countryside and agriculture, which are believed to be all originated from the existence of mass surplus laborers in China. When analyzing various sources of statistics, evidence shows that there is no longer a large pool of surplus laborers in rural China as most people believe. Based on this counterfactual result, all related events, such as the direction of agricultural technological changes, the level of comparative productivity of agricultural labor, and the degree of rural–urban income gap must be reconsidered.*

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**Key words:** comparative labor productivity, income gap, surplus labor, technological change

**JEL codes:** J21, J22, J24, O33

## I. Introduction

Surplus labor exists in rural areas in almost all dual economy countries. A large pool and a high proportion of surplus labor in the agricultural sector has been an insistent feature in the post-reform period in China. A host issues related to farmer, agriculture and rural work is associated with this feature, including that: (i) agricultural technological change tends not to save labor; (ii) comparative labor productivity in agriculture is constantly lower than that in secondary and tertiary sectors; and (iii) the rural–urban income gap continuously widens.

After nearly 30 years of economic reform, of integrating into the world market and worldwide impressive performance in terms of growth, however, the amount of surplus

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\* Fang Cai, Director and Professor, Institute of Population and Labor Economics, Chinese Academy of Social Sciences, Beijing, China. Email: [caifang@cass.org.cn](mailto:caifang@cass.org.cn); Meiyan Wang, Associate Professor, Institute of Population and Labor Economics, Chinese Academy of Social Sciences, Beijing, China. Email: [wangmy@cass.org.cn](mailto:wangmy@cass.org.cn). The authors gratefully acknowledge research support from National Social Science Foundation of China( No.06&ZD003).

labor in rural areas has surely diminished. It is necessary to consider the quantity of surplus labor in China so that relevant policy tools can be chosen in the implementation of the campaign of building a new countryside.<sup>1</sup> One of the authors of the present paper estimated the absolute amount and proportion of rural surplus laborers (Cai, 2007) and found that there are not many surplus laborers in China's agricultural sector, as most people believe. As this conclusion is extremely controversial, the present paper will further discuss this issue by supplying more detailed evidence as well as by constructing several scenarios to analyze the actual magnitude of surplus laborers. This will hopefully serve as a starting point for future research.

We use a framework of counterfactual analysis to reexamine conventional wisdom regarding the consequences of the existence of surplus labor. First, as a result of the large pool of surplus labor in agriculture, agricultural technological change has not focused on methods of labor-saving. Second, a large share of the labor force producing a smaller share of the nation's GDP leads to a low comparative productivity of agricultural labor compared to non-agricultural sectors. Third, the low comparative productivity stunts the increase in farmers' income and widens the income gap between rural and urban residents.

The massive magnitude of surplus labor in agriculture prevents the three phenomenon above from modifying over time and gives people little hope for solving the problems facing rural development in China. However, here we prove that the idea that the "bottomless" surplus labor pool in agriculture (the widely accepted belief that nearly 200 billion surplus laborers, accounting for approximately 40 percent of the total rural labor force) is actually out-of-date (the belief on agricultural technological change, comparative productivity of agriculture labor, and rural-urban income gap would collapse). The paper reexamines the stated facts above by focusing on the estimation of surplus labor and questioning the related facts. According to the counterfactual perspective considered in the present paper, the reduction in surplus labor in agriculture over time makes agricultural technological change more labor-saving oriented than it would otherwise be, increases the comparative productivity of agricultural labor to a higher level than it would otherwise be at, and narrows the income gap between rural and urban residents below the level that it would otherwise have reached.

The rest of the paper is organized as follows. Section II describes the expansion of non-agricultural employment among the rural labor force. Section III estimates labor surpluses in rural areas using various sources of statistics, concluding that at most 107 million rural laborers remain in surplus, accounting for 22 percent of the total labor force in rural areas, and that more than half of the surplus laborers are over 40 years old. Section IV

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<sup>1</sup> It is initiated by the Chinese central government and is aimed at solving problems related to farmers, agriculture and rural work.

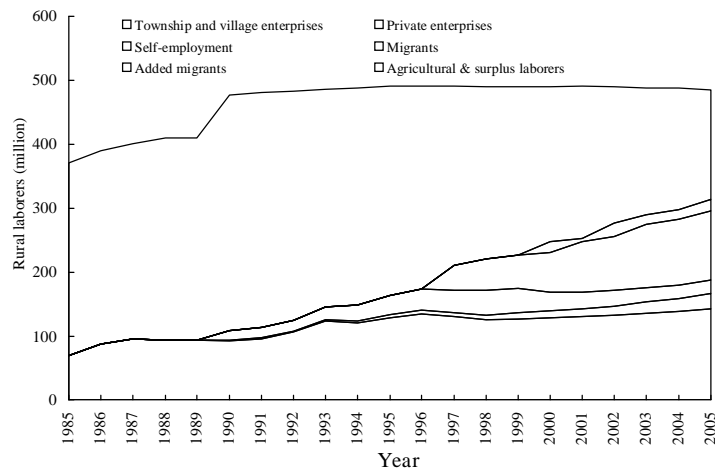
reexamines the direction of agricultural technological change, the extent to which comparative productivity of agricultural labor is lower than that of secondary and tertiary sectors, and the income gap between rural and urban residents. Although the authors question conventional wisdom regarding such factors, the final judgment requires further study. Section V concludes the paper and provides some policy implications.

## II. Expansion of Non-agricultural Employment

In the mid-1980s when the impacts of rural reform on labor incentives were revealed, most scholars and policy researchers believed that because massive numbers of laborers were released from agricultural works, the size of the surplus labor force ranged between 1 and 1.5 million workers, accounting for 30–40 percent of the total labor force in rural China (Taylor, 1993). Carter *et al.* (1996) estimated that in 1990 there were 172 million surplus laborers, making up 31.5 percent of total rural labor. Liu (2002) suggests that in 2000 there were 170 million surplus laborers, accounting for 46.6 percent of the total rural labor force. From these studies, the following is evident. First, the total amount and relative share of rural surplus labor seem to increase over time. Second, the base data used by researchers differs between studies.

In its transition period since the late 1970s, China’s statistics have tended to confuse researchers and policy-makers (Ravallion and Chen, 1999), making it difficult, in partiaular, to gain an accurate understanding of actual allocations of the rural labor force. In a sketch map

**Figure 1. Sketch Map of Rural Labor Distribution, 1985–2005**



**Sources:** NBS (1986–2006); the smaller number of migrants is from Cai (2006), and the larger number of migrants is from RSST-NBS (1992–2006).

**Note:** This figure is drawn based on actual data. Because the statistics for migrant workers overlap with those for rural non-agricultural laborers, we take this graph as a sketch map.

(see Figure 1), we plot how the rural labor force is distributed among different categories and show how the belief of an endless surplus labor contradicts reality. Based on rural laborers' job preferences revealed by previous studies (Zhao, 1999), we can rank laborers' choices regarding willingness to take a job using the following ordering: a rural non-agricultural job as first choice, migrant job as second, agricultural work as third, and being surplus labor if above alternatives are not available. Figure 1 also shows the labor allocation in this ordering.

The most important source of non-agricultural employment in rural areas is through township and village enterprises (TVEs). Between 1996 and 2003, when TVEs dominated rural non-agricultural employment, rural employment growth stagnated. Since 2003, employment in TVEs has not only recovered but also expanded beyond the level of 1996. In 2006, the total number of TVE employees reached 147 million. Meanwhile, rural private enterprises and self-employment have become more and more important in absorbing the labor force since 1990. They offset the negative impact of the decline in TVE employees on rural employment expansion between 1996 and 2003. From 1996 to 2006, TVE employment increased by 11 percent annually, whereas employment of private enterprises increased fourfold. As a result, total non-agricultural employment increased by 23.7 million within 10 years (NBS, 2006).

Another important outlet enabling the transformation of the rural labor force is the migration across regions. Cai (2006) shows that the number of migrant workers increased from 38.9 million in 1997 to 108 million in 2005. Cai *et al.* (2007) suggest, however, that the total number of migrant workers increased from 78.5 million in 2000 to 132 million in 2006. In order to show this larger estimation of migration, we also plot the extra number of this estimation in Figure 1.

If we assume that there was no overlapping between those categories of rural labor transformation mentioned above, the labor force left behind in agricultural employment was only 170 million during 2005–2006. According to Zhang's estimation (2006), agriculture needs approximately 180 million laborers to maintain the present productivity of labor, meaning that no surplus laborers remain. As a matter of fact, the summed number of already transformed laborers within rural sectors overlaps with the number of migrant workers; that is, we have to make more reasonable assumptions about how many laborers have really transformed locally and across regions to obtain an accurate estimation of the magnitude of the rural surplus labor force.

### III. Surplus Laborers and Their Age Structure

Estimating the magnitude of surplus labor involves the following steps. First, we look into

the overall available size of the rural labor force. According to officially published figures, there were 485 million laborers in rural China in 2005 (NBS, 2006). This statistic is categorized in accordance with residence of laborers aged 16 years and older, regardless of whether they actually work as farmers in agriculture, as TVE employees, owners or employees in non-agricultural business, or as migrant workers. In rural areas, the household responsibility system guarantees that everybody has his or her share of land, so it is a reasonable assumption that rural overt unemployment according to the International Labor Organization (ILO) definition is almost negligible because these laborers either work in non-agricultural sectors or in agriculture. Therefore, this category of “rural employed persons” can be viewed as the stock of rural laborers as well (Cai, 2004).

Second, we examine the magnitude of laborers having shifted to non-agricultural categories without overlapping with migrants. Because we cannot directly obtain the exact number of overlapped laborers between TVEs, private enterprises, self-employment and inter-regional migration, we substitute these figures from those of other studies. First, Hu (2007) suggests a number of 200 million or 41.2 percent of the total rural labor force having transformed from agricultural to non-agricultural sectors. Second, Li and Han (2007) suggest a number of 232 million or 47.9 percent of the total rural labor force having transformed from agricultural to non-agricultural sectors. We then assume these two scenarios accordingly.

Third, we calculate how many laborers are needed in agriculture at the current level of labor productivity. By agriculture in this paper, we refer to only farming and animal husbandry because the two subsectors dominate the use of agricultural labor, whereas other subsectors, such as forestry and fishery, generally only take advantage of marginally surplus labor. We sum up the demand for agricultural labor by mainly using data regarding agricultural production costs provided in RSST-NBS (2006).

The labor demand for farming is attained as follows. We multiply sown area of each crop by its demanded labor per unit to obtain the number of man-days each crop requires in a year. By summing up total man-days of all crops, we have the total number of man-days for farming. Labor demand of animal husbandry is calculated in a similar way. We multiply the number of each slaughtered livestock (or area in the case of aquatic products) by its demanded labor per unit and sum up to the total number of man-days of the animal husbandry sector. If we assume that the summation of farming and animal husbandry sectors overwhelmingly represents labor force demanded by agriculture, the total number of agricultural labor demand is calculated to be 57 billion man-days for 2005. Our conversion from the number of man-days into number of laborers is based on three assumptions. Namely, we suppose that each year an agricultural laborer works 250, 300 or 320 days, respectively. We multiply the total number of agriculture-demanded man-days by each assumed working day, and the 57 billion man-days are converted into 228 million laborers,

190 million laborers, or 178 million laborers, respectively (see Table 1).<sup>2</sup>

Having obtained all the above information, we are able to estimate several scenarios of labor surpluses in rural areas. As shown in Table 2, if we agree on a larger amount of total non-agricultural workers, namely, we suppose there are 232.3 million people having transformed from agricultural to non-agricultural employment, and that amount accounts for 47.9 percent of the rural labor force, and assume 227.9 million workers are needed by agricultural production, only 24.8 million rural laborers are in surplus (Scenario 3). Under this scenario, labor use in agriculture is supposed to be uneven from season to season, which is congruous with the seasonal feature of the sector, and the labor force is reasonably assumed to be used in such sectors as forestry and fishery. If we assume the same scale of non-agricultural labor engagement and agricultural laborers of 189.9 million, the number of laborers in surplus is only 62.8 million (Scenario 2). In this situation, labor use is relatively tight and, therefore, it is a conservative estimation of surplus labor. If we take the smallest assumption of labor transformation and assume 178 million laborers are required in agriculture, the labor force in surplus is 107 million, accounting for 22.1 percent of the total rural labor force. In this case, the labor force is fully utilized.

**Table 1. Demanded Laborers in Agriculture (million)**

Assumed man-days	Farming (1)	Animal husbandry (2)	Agriculture (1)+(2)
250 man-days/year	148	80	228
300 man-days/year	123	67	190
320 man-days/year	115	63	178

**Source:** RSST-NBS (2006).

**Notes:** Farming refers to cultivation of grain, oil-bearing crops, cotton, fiber crops, sugar crops, tobacco leaves, medicinal herbs, vegetables, melons, tea, fruits and others; animal husbandry refers to raising and grazing of domestic animals and poultry, including cows, horses, donkeys, mules, camels, hogs, sheep and goats, poultry, rabbits and artificial cultured aquatic products.

**Table 2. Scenarios of Labor Distribution in Rural China**

	Transformed labor		Agricultural labor		Surplus labor	
	Million	%	Million	%	Million	%
Scenario 1	200.0	41.2	178.0	36.7	107.0	22.1
Scenario 2	232.3	47.9	189.9	39.2	62.8	12.9
Scenario 3	232.3	47.9	227.9	47.0	24.8	5.1

**Note:** All estimates are based on a labor force size of 485 million.

<sup>2</sup> Because there isn't information regarding numbers of laborers needed for some crops and animal husbandry in published statistical yearbooks, we use similar kinds of crops and animals as proxies.

**Table 3. Age Distributions of Rural Labor Force by Status**

	Transformed labor		Agricultural labor		Surplus labor	
	Million	%	Million	%	Million	%
16–20	36.6	18.3	16.9	9.5	10.2	9.5
21–25	54.2	27.1	0.9	0.5	0.5	0.5
26–30	31.8	15.9	15.7	8.8	9.4	8.8
31–40	46.4	23.2	55.0	30.9	33.1	30.9
40 and over	31.0	15.5	89.5	50.3	53.8	50.3
Total	200.0	100	178.0	100	107.0	100

**Sources:** Numbers of rural employed persons come from NBS (2005). Age structure of rural employees is obtained from predictions based on the 2000 population census; age structure of migrant workers comes from Sheng and Peng (2006).

Based on demographic exploration, we can categorize each labor market status into five age groups (see Table 3). According to population predictions based on the National Census in 2000, we use the age distribution of the rural working-age population to proxy the labor force age structure. From the survey analysis by Sheng and Peng (2006), we also know the age structure of migrant workers. Supposing that the age distribution of rural non-agricultural employees follows that of migrant laborers, we can acquire the age structure of all the transformed labor force. Then we calculate the difference between age distribution of the total labor force and that of the transformed labor force and obtain an age distribution of those laborers engaged in agriculture and those remaining in surplus, if we assume that the age structures of the two groups of laborers are similarly distributed (Cai, 2007).

In Scenario 1, the most conservative estimate of surplus labor, we find that the transformed laborers tend to be young with more than 60 percent being less than 30 years old, whereas 90 percent of laborers engaged in agriculture are over 30 years old. As both empirical observation and theoretical expectation support the assumption that claims a similarity in age structure between agricultural and surplus laborers, the mass labor migration flows and other non-agricultural engagement have changed the composition of surplus labor, that is, 50 percent of such laborers are over 40 years old. Given the agreement by economists that the younger cohorts tend to attain higher education and health status than their previous cohorts (Hannum *et al.*, 2008), age can be used as a rough proxy of human capital and it influences the behavior and performance of migration. That is, the already transformed laborers are more likely to be successful in finding a non-agricultural job, whereas those remaining are more likely to encounter obstacles in finding a non-agricultural job.

#### **IV. Reexamining Other Related Facts Critical to Rural Development**

Nothing in the economic development process exists and changes insularly. As was stated previously, the non-labor-saving orientation of agricultural technological change, the low comparative productivity of agricultural labor, and the increasingly widened income gap between rural and urban residents are all linked and considered to be related to the unlimited surplus labor force. If we consider these factors under a framework of counterfactual analysis, that is, under an alternative situation of declining surplus labor, those long held beliefs are to a great extent unfounded. And if this is the case, it can be further shown that surplus labor is indeed on the decline. In what follows we discuss several issues that are believed to be related to the surplus labor force.

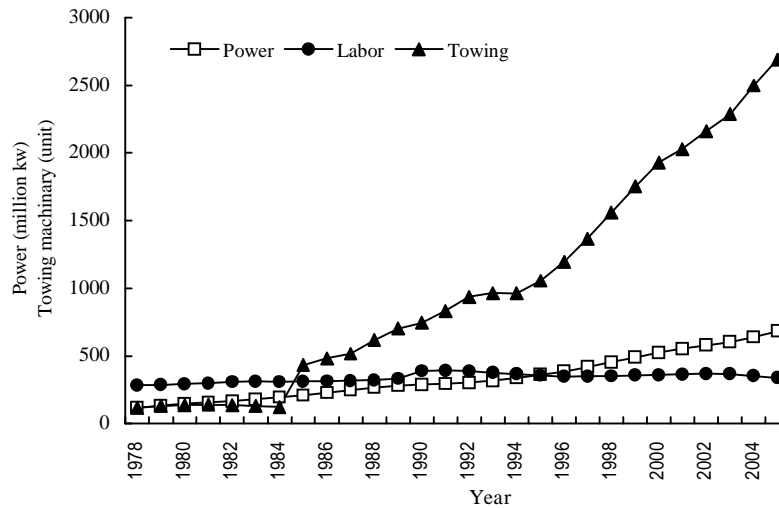
##### **1. Direction of Technological Change**

The development economic theory suggests that agricultural technological change is induced by relative scarcity of production factors (Hayami and Ruttan, 1980). Once the endowments of factors, namely, labor, capital and land, can be reflected by their relative prices or in other ways, agricultural technological change usually follows to enable saving of scarce factors or use of abundant factors. By observing closely the pattern and path of agricultural technological change in China, an evolution from a lack of technological needs in the period prior to reform, through land productivity-oriented technological change in the early period of reform, to labor productivity-driven technological change in the later period of reform, is evident.

Under the People's Commune system, there were no labor incentives and labor mobility, and agricultural technological diffusion was conducted in a top-down way. Farmers at the time were not interested in technological progress, despite whether it was labor-saving or land-saving, because neither enhancement of production or labor productivity benefited their interests. The introduction of the household responsibility system made rural households the claimants of their labor efforts. Before the rural labor force began its massive transformation to non-agricultural sectors, pursuing higher yields for contracted land increased their demand for land-saving technologies. An econometric study by Lin (1994) on diffusion of hybrid rice varieties in rural China in the 1980s shows that compared to traditional varieties, hybrid rice saved labor by 4 percent and animal power by 2 percent, whereas it increased fertilizer use by 6 percent and enhanced yield by 19 percent. Following the absorption of a large amount of the labor force by TVEs in the mid-1980s, massive numbers of rural laborers, attracted by higher earnings, started migrating to urban areas. As



**Figure 2. Labor-saving Orientation of Agricultural Technological Change, 1978–2005**



Source: NBS (2006).

Note: The figures tractor-towing farm machinery include only large and medium tractor before 1984. They also include mini-tractors afterward.

a result, the size of the surplus labor force in rural areas has substantially reduced, which has logically increased the demand for labor-saving technologies in agriculture. As shown in Figure 2, although the officially reported number of laborers used in agriculture declined, the total power used by agricultural machinery and tractor-towing farm machinery increased tremendously after the mid-1980s, indicating a trend of labor productivity enhancement.

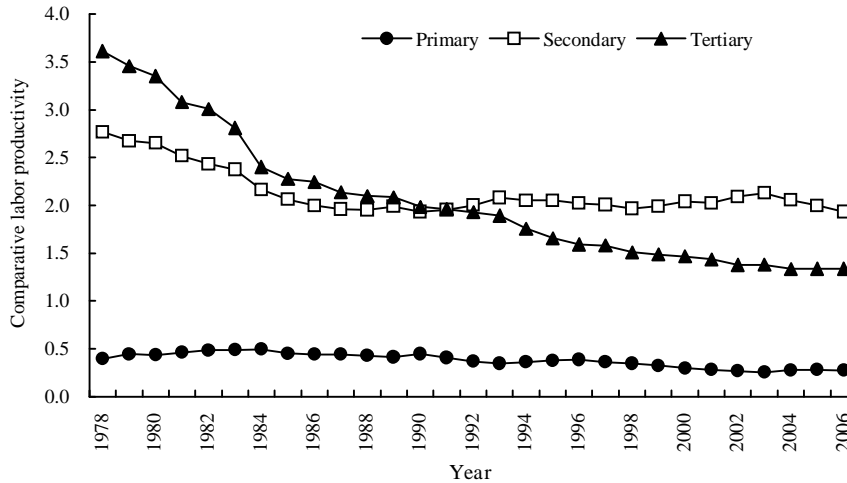
## 2. Comparative Productivity of Labor

Economists notice that in the course of dual economy development, labor transformation from agricultural to non-agricultural sectors is invariably restricted by a host of institutional barriers and is, therefore, characterized by the decline in the share of the agricultural labor force largely lagging behind that of agricultural output. Although economists often use the indicator of comparative labor productivity to depict this phenomenon, they find that it is less than 1 in agriculture and it is larger than 1 in the secondary and tertiary sectors. The formulas for calculating the indicator is:

$$C_i = (q_i / Q) / (l_i / L),$$

where  $C_i$  is comparative labor productivity of sector  $i$ , and  $(q_i / Q)$  and  $(l_i / L)$  represent the sector's output share and labor share, respectively. According to the officially published

**Figure 3. Comparative Labor Productivity Based on Official Data, 1978–2006**



Sources: NBS (2006); NBS (2007).

statistics, in 2006, the share of agricultural value added in total GDP was 11.8 percent, whereas the share of agricultural labor in the total labor force was still as high as 42.6 percent. Based on these data, the comparative labor productivities were calculated and are plotted in Figure 3, showing a large gap between agricultural and non-agricultural sectors. However, there are three reasons for us to doubt this large gap

First, as discussed in the previous section of the present paper, the actual size of the labor force engaged in agriculture is in fact much smaller than is indicated in official statistics. That is, if we calculated the magnitude of surplus labor in accordance with less agricultural laborers, the comparative labor productivity of agriculture would have been higher. In 2006, the rural labor force comprised 481 million workers. If 48 percent of these workers (or 228 million) transformed their work from agricultural to non-agricultural sectors, as is suggested by Li and Han (2007), the number of laborers engaged in agriculture or in surplus should be only 249 million, accounting for only 32.7 percent of the total rural labor force. Assuming that the difference in the agricultural labor force between the official and surveyed sources is all reallocated into the tertiary sector, the comparative labor productivities of the three sectors would be 0.36, 1.93 and 1.02, respectively, instead of 0.28, 1.93 and 1.34, based on official data.

Second, the actual magnitude of urban employment is much greater than what official data show. Statistics on urban employment come from two sources. One is the urban employment reporting system, which requires all registered units with financial independence

to report on their employees. However, some unreported employers and employees that employers are unwilling to report are missed. Data sourced from this system has an advantageous feature: it provides figures on urban employment by sector and by ownership. Another source is the household-based employment survey, which collects data by following ILO criteria for the employed, the unemployed and those out of the labor force, and provides relatively accurate information on urban employment.<sup>3</sup> In 2006, the household-based survey showed 283 million urban employees, which is 53.4 percent more than the figure provided by the reporting system. That is, 34.8 percent of urban employment is missing from the only reporting system. While calculating comparative labor productivities by sector, it is only the source from reporting system that is adequate, because it divides urban employment into different categories. Therefore, all calculations overestimate comparative labor productivities in secondary and tertiary sectors, because they are based on much smaller numbers of urban employees.

Third, the urban employment figure that is used to calculate comparative labor productivities for non-agricultural sectors does not include rural-to-urban migrant workers, which leads to overestimation. As previously mentioned in the present paper, there were 132 million migrant workers outside their hometown in 2006, equivalent to 46.7 percent of urban employment (Cai *et al.*, 2007), and in fact the majority of them worked in urban sectors (Sheng and Peng, 2006). If imagine that we incorporate those laborers into an urban pool of employed workers who are overwhelmingly engaged in secondary and tertiary sectors, these two sectors' comparative labor productivities would be greatly reduced under a reasonable assumption of unchanged total values added in these two sectors.

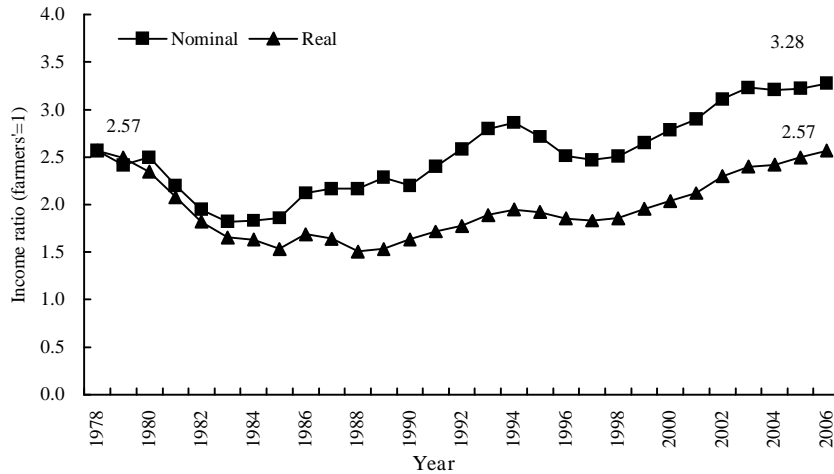
### 3. Rural–urban Income Gap

After reform began in late 1978, the income gap between rural and urban areas fell and then increased after the late 1980s. An international comparison shows that this income gap is among the largest in the world (Yang and Cai, 2003). The widely acknowledged rural–urban income gap, however, is calculated in nominal terms and, hence, the impacts of different price changes between rural and urban sectors are omitted. If we deflate household incomes per capita by rural and urban price indices, respectively, the gap in 2006 reaches the level of 1978 when rural reform was initiated; that is, in both the starting and ending years, the ratio of urban household income per capita to rural household income per capita in real terms was 2.57, instead of the nominal ratio of 3.28 (see Figure 4).

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<sup>3</sup> For a detailed explanation on the features of the two statistical systems of urban employment, see Cai (2004).

**Figure 4. Nominal and Real Income Gap between Rural and Urban Areas, 1978–2006**



Source: NBS (1986–2007).

Even if for the income gap is calculated in real terms, it is very likely to be overestimated due to misplacement of statistical data. A critical problem lies in the division between rural and urban populations. When NBS urban and rural socio-economic survey teams conduct household surveys, they cover mainly two kinds of household: urban residence households and rural permanent households, but omit migrant households floating from rural to urban areas. Usually migrants are excluded from being chosen as households keeping accounts for NBS in urban areas, and the income of rural households does not fully reflect migrants' earnings. As the size of this omitted population grows, its share of earnings in total income of rural and urban residents increases. Migrant households' income inevitably changes the contrast range between the two groups. Therefore, we should now compare income differentials in distinguishing between three groups of populations: namely, urban native residents, rural permanent residents, and rural-to-urban migrants.

According to the data provided by the fifth population census in 2000 and a 1 percent sampling survey of the population in 2005, numbers of rural-to-urban migrants moving for more than 6 months increased by 40.1 percent between 2000 and 2005, and their total number reached 95.8 million in 2005, accounting for 17 percent of the urban population. As for those who migrate to urban areas for less than 6 months, they actually float between rural and urban areas frequently, which affects the actual distribution between rural and urban populations. Although the current definition distinguishing between rural and urban populations has incorporated the migrants with more than 6 months stay into urban

populations, they could hardly be included in the sampling framework of household surveys, because the absence of formal *hukou* status makes them unstable in residence. Missing income of long-term migrant households brings about information insufficiency and distortion on actual income in urban areas. Based on data provided by NBS (2006), in 2005, disposable per capita income of urban households was 10 493 yuan, whereas the net income per capita of rural households was only 3255 yuan. However, according to a survey,<sup>4</sup> per capita income of rural-to-urban migrant households was 8368 yuan, equivalent of 2.6 times per capita income of rural households and 80 percent of that of urban households. Although we can hardly claim a disappearance in rural urban income gaps, the huge magnitude of the migrant population undoubtedly serves to minimize the rural–urban income gap.

## V. Conclusion and Policy Implications

After nearly 30 years of reform, opening-up and growth, the number and proportion of surplus laborers in rural China is substantially reduced. Consequently, agricultural technological change has shown more of a tendency to improve labor productivity. As massive numbers of laborers shift from rural to urban sectors and urban employment expands, the difference in comparative labor productivity between agricultural and other sectors decreases. If we appropriately define rural and urban populations, that is to include migrants into the category of urban residents, the income gap between rural and urban areas is not as big as is generally believed. This reexploration and clarification of factors will help us in solving problems facing farmers through maintenance of reform and development.

Reexploring the above facts, however, by no means suggests that problems faced by farmers, agriculture and rural work will disappear, and that the focus of the government policies should be eased. In contrast, all those changes we observe raise ever greater challenges facing the reform and development of rural China. First, the current surplus laborers and those who will shift from agricultural jobs as the labor productivity of the sector enhances are disadvantaged in terms of demographics and human capital endowments. Therefore, more intense efforts are needed to attract and help them to continue to move from agricultural to other jobs. Further eliminating institutional obstacles deterring

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<sup>4</sup> This survey was conducted by the Institute of Population and Labor Economics, Chinese Academy of Social Sciences in 2005. In Shanghai, Shenyang, Wuhan, Xi'an and Fuzhou, 500 urban households and 500 migrant households were sampled in each city. In Wuxi, Benxi, Yichang, Baoji, Zhuhai, Shenzhen and Daqing, 400 migrant households were sampled in each city.

migrants' mobility and creating equal access for them to social security and public services are appropriate steps that can be taken. Second, acclimating with the labor-saving orientation of agricultural technological change, public inputs in agricultural scientific research should be directed by relative prices of production factors reflecting their relative scarcity. Finally, mainly through reforming the *hukou* system, the government should build a stable policy environment to enable migrants to live, work and enjoy public services in their destination cities and contribute to the reduction in the gaps in income and social welfare between rural and urban areas by enlarging the scale of migrants.

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