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Social Viability Roles of the Agricultural Sector in China

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Abstract

This study assesses how the transfer of rural labor to non-farm sectors affects China's national economy and the role the agricultural sector plays with respect to rural-urban migration. Econometric models using official Chinese statistics are used to: evaluate the marginal productivities of rural labor in agriculture versus non-agriculture; identify determinants of rural labor transfer; and assess the socioeconomic impacts of these transfers. It is concluded that though agricultural growth stems problems relating to over-urbanization, there are significant economic costs and undesirable social consequences associated with under-urbanization. Gains brought about by flexibility in the transfer of rural labor to non rural labor include higher GDP and reduced discrepancies in living standards for rural and urban populations.

Keywords: *agricultural development, China, migration, rural labor*

1. Introduction

This paper addresses issues associated with rural-urban migration in China today. While problems relating to excessive urbanization (such as urban congestion, pollution, and crime) are an issue, China's experience suggests that problems of under-urbanization (such as underutilization of the rural labor force, environmental degradation due to overuse of agricultural resources, inadequate growth of rural income, prevalence of rural poverty, underdeveloped rural infrastructure and social services, and legal infractions by rural residents) may outweigh them.

The social viability role of agriculture should be assessed from the viewpoint of the development of both rural and urban populations. Accordingly, this paper intends to: identify major socioeconomic mechanisms that influence rural and urban development; assess the roles that agriculture plays in social viability and stability; analyze how these roles are affected by changes in policies and social infrastructure; and derive policy implications.

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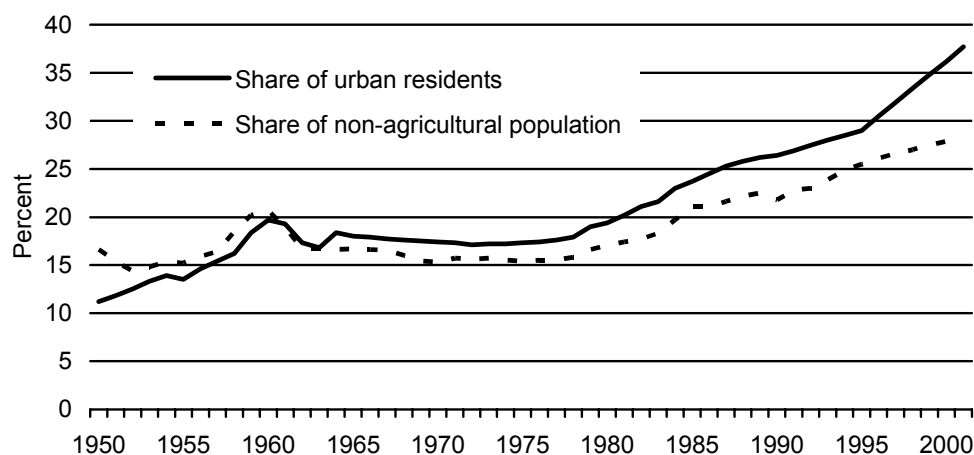
This report is organized as follows. The next section describes the urbanization process and the transfer of farm labor to non-farm labor in China. The third section introduces the analytic framework and methodology used in this study. The fourth section presents and discusses model results. The last section summarizes findings and discusses policy implications.

2. Overview of urbanization and rural labor transfer

Historical development

In the mid 1950s, China established a household registration system, which allowed the government to control migration of rural people to urban areas. At the time, China intended to raise the initial capital needed for industrialization from agricultural surplus. Because of limited land resources, the government promoted intensive land cultivation in order to raise land productivity. Rural laborers were organized into collective farming units and the government implemented a state procurement system through which it acquired nearly all surplus farm products at low, state-set prices. Although agricultural output was increased through this approach, labor productivity remained low. The speed of urbanization was restricted by agriculture's capacity to generate surplus, and a need to control rural-urban migration continued to be strongly felt. In reality, little progress was made toward urbanization in China until the 1980s (see Figure 1).

Figure 1 Development of urbanization in China



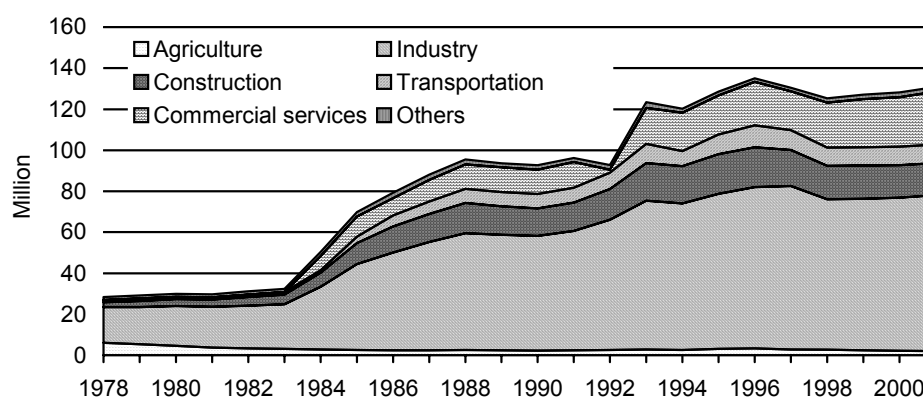
Source: Authors' calculations based on official statistics (NSB 2002a).

When the government shifted its top priority to economic growth with the policy reforms of 1978, the situation began to change. A burst of agricultural productivity was achieved in the early 1980s through the household production responsibility system, which altered producer incentives, and through an increase in modern farm inputs. Along with increased imports of grains, this greatly eased food shortage. The government gradually relaxed restrictions on the transfer of rural laborers to non-agricultural industries and China's urbanization process accelerated notably¹.

¹ The increased share of urban population in China is partially due to a revision in the administrative definition of towns. Prior to 1963, a town was defined as consisting of more than 2000 permanent residents, of which 50% or more were considered as non-agricultural population. In 1964, the number of permanent residents for a town was raised to 3000 and the percentage of non-agricultural population to 70%, or 2500 permanent residents with over 85% of non-agricultural population. In 1984, a town was defined as: an area where a county-level government was located; an area with a population of below 20,000 with a non-agricultural population of 2,000; an area with a population of more than 20,000 with 10% or more of non-agricultural population; remote, mountainous, small-sized mining, small harbor, tourist, or border area with non-agricultural populations below 2000. If the non-agricultural population share is used as an indicator, China's urbanization rate was only 27.9% in 2000, in comparison 36.2% using urban population (NSB 2002; MOA 2002).

During the 1980s, rural labor transfer to off-farm jobs resulted in the rapid development of Township and Village Enterprises (TVEs). TVEs emerged during the collective farming stage, and up to the mid 1980s were owned by rural collectives. Initially, TVEs were mainly bound to processing local raw materials and supplying local markets. These restrictions were removed, however, by the policy reforms of the 1980s when the government granted TVEs preferential financial and taxation status to encourage their development. As a result, the total number of those employed by TVEs rose rapidly (see Figure 2). During the same period, the government also began permitting rural people to establish private businesses (Song and et al 2000). While a large number of rural laborers transferred to non-farm activities during the 1980s, most of them remained in their hometowns. The transfer of rural laborers during that period was characterized as “leaving the land but not countryside”. Rural labor transfer was bolstered by policies designed to increase rural employment opportunities and raise rural income without threatening urban sector food supply and stability.

Figure 2 Number of labourers employed in TVEs



Source: Authors' calculations based on official statistics (NSB 2002a).

But there was a negative side to TVEs. They suffered from the lack of scale economy, made inefficient use of land and spread pollution through countryside. By the 1990s, it became evident that local TVEs were increasingly outdated. As market competition grew, TVEs had to take measures to raise efficiency and reduce costs. Employment practices were increasingly based on efficiency criteria rather than communal considerations and their ability to absorb rural surplus laborers was notably reduced.

The policy and market changes of the late 1990s imposed further challenges to TVEs. In order to protect the environment, the government increased pollution controls. As income increased, consumers became increasingly conscious of product quality. Technically backward TVEs had trouble surviving. Finally, TVEs, especially exported-oriented ones, were hard hit by the Asian financial crisis of 1997. During this decade, the total TVE employment remained at around 130 million (NSB 2002).

Alongside TVE employment, many rural laborers begin to find off-farm jobs away from hometowns. Although the government attempted to maintain administrative restrictions on migration to cities through the household registration system, the rapid changes in economic and social infrastructure rendered controls increasingly ineffective. With the abolishment of the food rationing system in the early 1990s, food products could be bought freely in the urban market. Housing system reforms opened the way for migrants to rent, or even buy houses, in cities. Some cities even introduced preferential residential policies to attract external investors, including rural entrepreneurs. Local governments in areas with substantial surplus rural labor often assisted out-migration by providing rural laborers with training and job information. In some localities, the governments made efforts to move rural residents from small villages to rural towns with the goal of improving social services as well as protecting scarce land resources.

Classifications of population

The classification and terminology used to describe urbanization and migration in China is complex. The national household registration system includes two elements, identifying each individual as 1) either agricultural or non-agricultural and 2) either urban or rural. This results in the overlapping illustrated in Figure 3 which depicts the relationships among different population types. It shows, for example, that the agricultural population living in suburban areas of cities is counted as urban population, while, rural people who take part-time off-farm jobs in urban areas retain their rural population status.

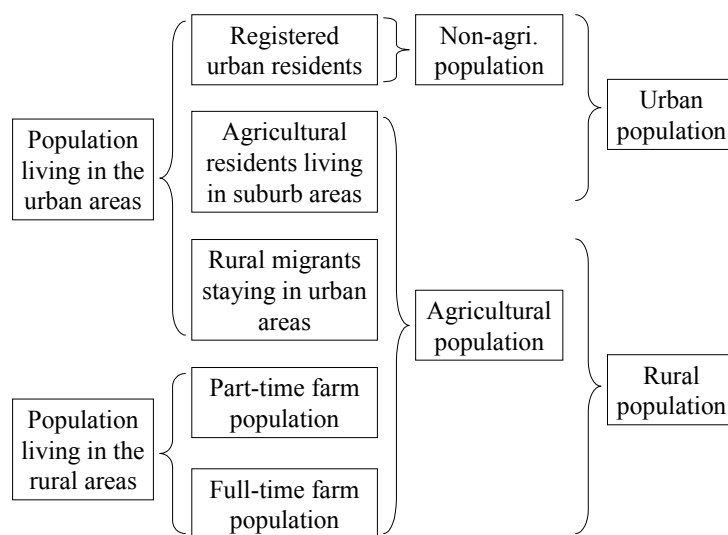
Another distinction to be made is between “transferred rural labor” and “migrants.” Generally speaking, transferred rural labor refers to laborers working either part or full time in local (or at least provincial) off-farm jobs. Migrant labor tends to refer to workers who leave rural areas to work in urban areas for the better part of the year, even though they don’t have urban resident status.

Pattern of rural labor transfer and migration

According to Xian (2001) and Cai, Zhang and Du (2002)², the rate of rural labor transfer to off-farm jobs has accelerated notably in recent years. Agricultural labor in China peaked in 1991 and declined steadily thereafter. Rural household survey information (Xian 2001) indicates that over one-half of transferred rural laborers remained within their home counties. While such localized transfers are still dominant, their share declined notably between 1997-2000. Rural laborers who received better education tend to move to off-farm jobs. It is found that cash income brought home by migrant laborers is related positively to educational levels.

There are distinct regional patterns to the transfer and migration of rural laborers. The share of rural laborers who transferred to non-agricultural activities was higher in municipalities and coastal provinces with more prosperous economies. These regions attract a lot of migrant laborers from other provinces as their growing economies generate new jobs. In contrast, inland backward regions have limited local employment opportunities and rural laborers tend to migrate to other counties or provinces for jobs.

Figure 3 Relations between different population sets



Source: Authors.

² Although these two studies use the same data source, the reported results differ frequently. This may be attributed to that different methods for treating data. We prefer to use the study by Cai, Zhang and Du (2002) as a reference.

Urbanization and rural labor transfer policies and instruments

Although China's urbanization process has picked up since the advent of policy reforms, rural people can still only change their residency status under certain conditions, such as employment upon graduation from university, discharge from the army, confiscation of cultivated land, and the purchase of housing in cities on the commercial market. Rural laborers who go to urban areas for jobs are required to pay city governments fees for temporary residency, family planning, urban expansion, etc (Bai and Song 2002).

In 1997, the Chinese government began experiments on the urban residency system in 382 counties, in small cities and towns³ (Ministry of Agriculture 2002). Under the scheme, rural people who had procured stable income-earning jobs in these cities and towns were allowed to apply for permanent residence. These individuals were given the choice of either retaining the parcels of land contracted to them by the government according to their status as rural people, or lease it to others to avoid leaving the land unused. The Ministry of Agriculture (2002) reports that by 2001, only 1.3 million rural residents had taken this option and changed their residency status. In the meantime, many cities began to relax residency restrictions, according preference to those with higher skills and capital investment.

There are indications that the Chinese government is moving toward a coordinated urban and rural sector strategy. Recently, the Chinese government declared a target of building "a well-off society in an all-round way by 2020" (Jiang 2002; Zhu 2003). Two basic policies are proposed with regard to the transfer of rural laborers. The first is to encourage the rural labor force to find work locally, either in labor-intensive agriculture or in non-agricultural industries. The second is to assist the rural labor force in finding employment in other areas by strengthening information networks and employment services, offering pre-transfer training and overseeing the flow of the rural labor force. Establishment of a unified and standardized labor market and new household registration system is also being planned (IOSC 2002). It is expected that China's urbanization process will accelerate in the years to come.

Regional variations in socioeconomic conditions lead to diverse approaches towards rural labor migration. In economically developed regions, where a market-oriented economic system tends to be well established, enterprises, especially private ones, employ workers as cheaply as possible. Most unskilled positions are filled by rural migrant laborers, especially those coming from backward inland regions and immigration of rural laborers is allowed to take place rather freely.

However, unlike other regions, few of these migrants are granted permanent residency. This results in the regular movement of migrant laborers between employment areas and their hometowns. Guangdong, where migrant laborers come from neighboring provinces like Guangxi, Jiangxi and Hunan, as well as distant provinces like Henan, Sichuan and Guizhou, is a typical example. In many cities, governments face pressure to reduce local unemployment and to maintain adequate incomes for urban residents. Minimum wage schemes have been adopted in recent years in many cities. Those factors tend to discourage migration.

In less developed populous inland provinces, governments use labor export as a means to raise rural income and encourage out-migration by providing training, job information and logistic services.

Major problems

Since China's accession to the World Trade Organization (WTO), raising rural income has been perceived as a major goal. Given the fact that agricultural resources will continue to decline as a result of urbanization and expansion of the industrial sector, and that agricultural prices can no longer be raised by the government as they were under the planning scheme, the transfer of rural labor to non-agricultural jobs is regarded as a primary way to achieve this objective. However, due to a lack of effective governance, the transfer of rural laborers has not been well coordinated, and has lead to the following range of problems.

Firstly, although migrant laborers are better educated than those who stay home for farming, their knowledge and ability are still inadequate for them to find and hold skilled jobs in towns and

³ Small cities and towns refer to cities of county seats or towns.

cities. Most migrant laborers engage in arduous, low-paid jobs. Furthermore, without urban residency, this “floating population” is not entitled to the full range of social services, such as child education, socialized health services and housing, provided by city governments and employers. This difference in status between rural migrants and urban residents is a major cause of conflict.

Secondly, China lacks an efficient job information system to facilitate transfer of jobs. Migrants find themselves making blind moves, leading to substantial wastes of time and money and even recourse to illegal actions in order to survive away from home.

Thirdly, rural migrants lack bargaining power when entering into work contracts with urban employers who tend to depress wages as much as possible. Other problems include inferior working and living conditions, failure to provide labor insurance in accordance with government regulations, failure to pay wages, undue dismissal of employees, and inhuman treatment of workers. Migrant laborers are usually unable to protect their own interests because they lack legal knowledge and the ability to enter lawsuits with employers.

Fourthly, faced with the great uncertainty of off-farm jobs and incomes, households, even whose primary laborers work away from hometowns, maintain their contracted land. The contracted land is a means for rural households to ensure family security, however, it leads to inefficient utilization of China’s scarce land resources⁴.

Fifthly, given the fact that official permanent residence in urban areas is still very difficult for rural laborers to obtain, they take temporary jobs. This results in an over concentration of travel and upheaval for the transportation system during large-scale seasonal movements of rural migrants between hometowns and workplaces.

Sixthly, frequent separation of migrants from their families can affect family stability. It also affects adhesion to the family planning policy, which local leaders are responsible for implementing. Migrant families can evade birth control measures and have multiple births even though they do not have sufficient incomes and adequate living conditions for their children.

Finally, rural migrants are generally better educated than those who stay home, thus migration constitutes an export of human capital from the rural sector to the urban sector, that is from poorer regions to richer regions. While migrant laborers can earn more money from off-farm work than from farming, they do not gain much new knowledge and skills. This phenomenon may lead to growing polarization in regional development.

3. Methodology

Literature review

Many empirical studies on urbanization and migration of rural labor have been based on theoretic models proposed by development economists, such as Lewis (1955), Fei and Ranis (1961) and Todaro (1971), which identify the push and pull factors determining rural-urban migration in different socioeconomic settings.

While, urbanization and rural labor migration have received much attention in China as well, most studies have been descriptive and analytic in nature. How the transfer of rural labor to the non-agricultural sector contributes to national economy is a topic discussed by many researchers (e.g. Zhang 1997; Hu 1998; Pan 1999; Ding 2001).

The overall consensus is that the transfer of rural labor to non-agricultural sectors significantly contributes to the growth of the Chinese economy by raising labor productivity. It is also recognized that the transfer of rural labor may generate negative impacts, such as inefficient use of agricultural resources, decrease of agricultural production and general decline in rural areas. Zhang et al (2002) assess the effect of out-migration of labor on farm production at the household level using survey data. They conclude that when male household heads go work off farm, leaving women in charge, there is no negative impact on household crop production. This is because the land-labor ratio, and thus marginal productivity of labor in farming, is low in China. Withdrawing labor from agriculture does not necessarily result in a notable decline of output and the increased remittances from migrants may even improve household production conditions.

⁴ To cope with the problem, the Chinese government adopted the Law for Rural Land Contract in late 2002, which provides a legal basis for protecting the interests of land users and for voluntary transfer of land use rights.

How well China's rural labor market functions is an issue under hot debate. While many maintain that administrative barriers, such as the household registration system and restricted access to urban social and educational systems, hinder transfer of rural labor to the urban sector, others maintain that the accelerated growth of rural labor transfer denotes the emergence of a functional rural labor market. Cai, Zhang and Du (2002) find that off-farm incomes are related positively to educational attainment of rural labor, indicating that human capital is remunerated through the market mechanism. De Brauw et al (2002), using household survey data from the past two decades to assess development of China's rural labor market, conclude that many trends are consistent with the emergence of a functional labor market.

Some studies focus on identifying determinants to rural labor transfer. Du and Bai (1997) cite lack of agricultural resources as a major factor for out-migration. Zhao (1997), using household survey data from Sichuan Province, finds that migrants were mainly unmarried young males with basic education and that those with higher educational preferred to transfer locally. Du (2001) studied time allocation of rural labor between agriculture and non-agriculture in poor regions. He concludes that time allocation is driven not only by the optimization of labor resources, but also by minimizing income risk. In this regard, family assets and labor resources are factors used to cope with income risk. Xian et al (2001) find that the efflux of rural labor is related positively to rural per capita net income and related negatively to per capita land area and share of agriculture in GDP, while influx of rural labor is related positively to wage rates of urban employees and development of private businesses. De Brauw et al (2002) find from a multivariate analysis that better educated young males tend to dominate off-farm employment and out-migration. They also find that the land-labor ratio and value of rural households durables are related positively to labor transfers to off-farm jobs.

The phenomenon of return migration has been examined by Bai and Song (2002) who used sample survey information to analyze why migrant laborers choose to return home. They find that difficulty in finding jobs and family reasons rank as the most important factors for return migration, while returning to home areas to open businesses is very rare. They also find that educational levels of migrant laborers are related positively not only to off-farm incomes levels, but also to the length of their stay outside, indicating that education helps rural laborers find and hold jobs. Zhang et al. (2001) examine China's rural labor transfer experience and conclude that agriculture can act as a buffer during economic recessions.

Impacts of rural labor transfer on income disparity among regions or households is another issue that receives great attention. Zhang (1998) uses the decomposition method to evaluate effects of different sources of income on equality of income distribution. He concludes that non-agricultural income is a major factor in high regional income disparity, which relates in turn to regional variations in off-farm employment opportunities. However, Gu (2002) finds that the officially reported per capita GDP tends to exaggerate regional income disparity by failing to take into account interregional labor transfer. He concludes that interregional flow of rural labor and the associated transfer of income narrow regional income gaps.

Model specification

This study on rural labor transfer and urbanization limited itself to the following empirical analyses: contribution of rural laborers to agricultural GDP and non-agricultural GDP; determinants of the pattern of interregional transfer of rural laborers; and socioeconomic impacts associated with rural labor transfer.

Contribution of rural laborers to agricultural GDP and non-agricultural GDP.

The evaluation of labor's contribution to GDP is arrived at through the production function approach. Agricultural GDP (AGDP) is specified as a function of agricultural labor input (AL), crop planting area (AREA) and material inputs (AMI) with all values converted using the GDP deflator into real terms⁵. Similarly, non-agricultural GDP (NAGDP) is specified as a function of urban labor (UL), rural laborers transferred to off-farm jobs (RTL), capital assets represented by

⁵ Variable AREA not only reflects regional endowment of land resources, but climate and infrastructure (e.g. irrigation) conditions as well, major factors in determining cropping intensity in different regions.

total value of depreciation in the GDP account (DEP). As national GDP is the sum of AGDP and NAGDP, the contribution of the transfer of rural labor to non-agricultural sectors to the national GDP can be assessed with the following equation system:

$$AGDP = f(AL, AREA, AMI) \quad (3.1)$$

$$NAGDP = f(UL, RTL, DEP) \quad (3.2)$$

$$GDP = AGDP + NAGDP \quad (3.3)$$

Determinants of the pattern of interregional transfer of rural laborers.

How to treat transferred rural labor is of critical importance for this study. The simplest way is to assume that rural laborers are homogenous and thus transferred laborers are equally productive as those who stay in farming. Alternatively, homogeneity of rural laborers can be taken as a testable hypothesis. In the former case, AL is defined as total rural laborers (RL) minus rural transferred laborers (RTL). In the latter, AL is defined as $RL - \beta_1 \cdot RTL$, where whether homogeneity of rural labor should be accepted corresponds to a hypothesis test $\beta_1 = 1$. In the NAGDP equation, both urban labor and transferred rural labor are directly used as explanatory variables and thus the functional form is flexible enough to allow for non-homogeneity. However, in order to make comparisons, an alternative form with total labor input being defined as $UL + \beta_2 \cdot RTL$ is also considered, where homogeneity of urban labor and rural transferred labor corresponds to a hypothesis test $\beta_2 = 1$. To test labor homogeneity, nonlinear form of production functions are required. Thus, defined as Cobb-Douglas function, the two versions of production functions are as below:

Linear-form version

$$\text{Log}(AGDP) = \alpha_0 + \alpha_1 \text{Log}(RL - RTL) + \alpha_2 \text{Log}(AREA) + \alpha_3 \text{Log}(AMI) + u \quad (3.4)$$

$$\text{Log}(NAGDP) = \gamma_0 + \gamma_1 \text{Log}(UL) + \gamma_2 \text{Log}(RTL) + \gamma_3 \text{Log}(DEP) + \gamma_4 ER + v \quad (3.5)$$

Nonlinear-form version

$$\text{Log}(AGDP) = \alpha_0 + \alpha_1 \text{Log}(RL - \beta_1 RTL) + \alpha_2 \text{Log}(AREA) + \alpha_3 \text{Log}(AMI) + u \quad (3.6)$$

$$\text{Log}(NAGDP) = \gamma_0 + \gamma_1 \text{Log}(UL + \beta_2 RTL) + \gamma_3 \text{Log}(DEP) + \gamma_4 ER + v \quad (3.7)$$

Two dummy variables, ER for the eastern region and CR for the central region, are included in the production functions to take account unexplained regional differences⁶.

To reflect the regional pattern of rural labor employment and interregional transfers, two sets of indicators are derived from the available statistics. The first set of indicators shows the regional patterns of rural labor employment and transfer, which may be called intensity of rural labor employment. The indicators are defined by the formula below:

$$IRLE_{ij} = (RLE_{ij}/RLE_j)/(RL_i/RL) \quad (3.8)$$

where RLE_{ij} is the number of rural labor employment in region i by type j, RLE_j is the national total employment by type j, RL_i is number of total rural labor in region i, and RL is national total of rural labor. By definition, when $IRLE_{ij}$ is greater than one, the ith region has a higher proportion of rural labor employment by type j.

With regard to labor transfer, rural households need to consider not only whether to take action or not, but also where to go. Different types of transfers are associated with different costs and benefits and thus should be explained separately. Based on the available statistics, rural labor employment and transfer is classified into the following five types:

⁶ The eastern region includes Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan. The Central region includes Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hunan. The western region includes Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang.

Agricultural labor (IRLEA);
 Off-farm employment within home townships (IRLEWT);
 Off-farm employment out of townships but within home counties (IRLEWCOT);
 Off-farm employment out of counties but within home provinces (IRLEWPOC); and
 Off-farm employment out of home provinces (IRLEOP).

The second set of indicators focuses on inter-provincial transfer of rural labor. Using the matrix of rural labor influx and efflux by province in 2000, the following two indicators are derived:

$$\begin{aligned} \text{RSRLT}_{sd} &= (\text{TRRL}_{sd}/\text{RL}_s) * 100 & (3.9) \\ \text{NSRLT}_{sd} &= (\text{TRRL}_{sd}/\text{RTL}) * 100 & (3.10) \end{aligned}$$

where TRRL_{sd} stands for the number of rural laborers transferred to off-farm jobs from source region to destination region, including within home province transfer; RL_s stands for total amount of rural laborers in source region; and RTL stands for national total of transferred rural laborers.

By definition, RSRLT reflects how large a proportion of rural laborers in source region transferred to off-farm jobs either within or out of home provinces. The statistics reveal that the proportion is relatively high in both economically developed regions and in populous but less developed regions. However, within-province transfers prevail for the former case, while out-province transfers prevail for the latter. In contrast, NSRLT measures the share of interregional transfer of rural laborers from source region in the national total, therefore, the scales of rural labor force in different regions matter.

These two sets of indicators are used as dependent variables in the regression analyses. To identify important determinants for the pattern of rural labor employment, the equations are specified as below:

$$\text{IRLE}_{ij} = f(\text{LANDL}_{ij}, \text{EDRL}_{ij}, \text{SNAGDP}_{ij}, (\text{AGDPL}/\text{ULW})_{ij}, \text{HPA}_{ij}, \text{DNSE}_{ij}, \text{UUE}_{ij}, \text{UNR}_{ij}) \quad (3.11)$$

where: LANDL = cultivated land per rural labor;
 EDRL = educational attainment of rural labor⁷;
 SNAGDP = share of non-agricultural GDP in total GDP;
 AGDPL = agricultural GDP per rural laborer;
 ULW = urban labor wage;
 HPA = value of productive assets per rural household;
 DNSE = degree of development of no-state economy;
 UUE = urban unemployment;
 UNR = urbanization rate;
 subscripts i and j refer to employment type j and region i, respectively.

It is expected that, if rural people have adequate land resources to work with they may achieve a comfortable livelihood through farming. Education is related to ability to gather job information, master skills and adapt to a new living environment, which are important for migration. The share of non-agricultural sectors reflects the status of regional economic development, which is an important determinant for capacity to generate off-farm jobs. Agricultural GDP per rural labor is used as a proxy for farm wage. The urban labor wage is represented by that of construction workers and employees in wholesale, retail and restaurants, where a significant proportion of positions are filled by unskilled rural laborers. Productive assets owned by rural households are not only the major productive means for household businesses, but also a kind of wealth held by rural families. Given the current social infrastructure few rural laborers can be employed by state-owned enterprises, except for low-paid informal work. In contrast, the private sector uses a lot of rural laborers in order to save labor costs, especially in labor-intensive industries. Therefore, the scale of rural labor transfer is likely to be affected by development of non-state sector. Recent

⁷ Variable EDRL is an index of weighted average of rural labor education levels, where the weights are 0.6, 0.9, 1.1, 1.3 and 1.5 for illiterate, elementary school, middle school, specialized school and college, respectively.

experience shows that when urban unemployment becomes severe, city governments tend to impose restrictions on employment of rural migrants, therefore migration is likely to be affected by urban unemployment. The variable UUE can also be seen as a proxy for the probability to find jobs in urban sector. It is expected that highly urbanized regions may offer more job opportunities to rural migrants, especially in the service industries.

Similar specification is also applied to the models of interregional transfer of rural laborers. The two equations take the forms as below:

$$\begin{aligned} \text{RSRLT}_{s,d} = f(\text{DIST}_{s,d}, \text{NAGDP}_s, \text{NAGDP}_d, \text{LANDL}_s, \text{AGDPG}_s, \text{DNSE}_s, \\ \text{DNSE}_d, \text{EDRL}_s, \text{ULW}_s, \text{ULW}_d, \text{UUE}_s, \text{UUE}_d, \text{UNR}_s, \text{UNR}_d, \text{GD}) \end{aligned} \quad (3.12)$$

$$\begin{aligned} \text{NSRLT}_{s,d} = f(\text{DIST}_{s,d}, \text{NAGDP}_s, \text{NAGDP}_d, \text{LANDL}_s, \text{AGDPG}_s, \text{DNSE}_s, \\ \text{DNSE}_d, \text{EDRL}_s, \text{ULW}_s, \text{ULW}_d, \text{UUE}_s, \text{UUE}_d, \text{UNR}_s, \text{UNR}_d, \text{GD}) \end{aligned} \quad (3.13)$$

Previously mentioned variables retain their meanings. New variables added into the two equations include:

$\text{DIST}_{s,d}$ = distance through railway between the capital cities of source and destination regions;

NAGDP = non-agricultural GDP in source or destination regions;

AGDPG_s = growth rate of agricultural GDP in source region;

GD = dummy variable for Guangdong Province.

Distance is related positively not only to the travel costs of interregional transfer, but also to job-search costs. Therefore, scale of migration is related negatively to distance between home and destination. Since most of transferred rural laborers are employed in non-agricultural sectors, non-agricultural GDP can represent a pull force to attract rural laborers out of homes. In contrast, growth of the agricultural sector in source regions can pull rural laborers back. The dummy variable GD is added to take into account the fact that over one-half of the rural laborers who move inter-regionally choose Guangdong as destination. To evaluate the effects of the above variables on interregional migration, all observations corresponding to local transfers are excluded when estimating the models.

Socioeconomic impacts of with rural labor transfer.

Transfer of rural labor to off-farm jobs may have multi-faceted socioeconomic impacts. Due to data limitation, we can only consider the effects on rural income and on urban-rural income disparity. The two equations are specified as:

$$\text{RNI} = f(\text{HPA}, \text{LANDL}, \text{EDRL}, \text{SRNAL}, \text{ER}, \text{CR}) \quad (3.14)$$

$$\text{URIR} = f(\text{PGDP}, \text{LANDL}, \text{UUE}, \text{UNR}, \text{SRNAL}, \text{ER}, \text{CR}) \quad (3.15)$$

where the new variables are:

SRNAL = share of non-agricultural labor in total rural labor force; and

URIR = ratio of urban per capita living income to rural per capita net income.

Equation (3.14) assumes that rural per capita income is dependent on the amounts of household resources (HPA and LANDL), their quality (EDRL) and ways to use them (SRNAL).

Level of economic development is perceived as a major determinant of urban-rural income disparity. This disparity may constitute a nonlinear trend. Increase of land area may raise labor productivity in agriculture, which improves rural income. When urban unemployment becomes severe, urban wages tend to fall and income disparity tends to narrow, *ceteris paribus*. Regions with higher degrees of urbanization often have better infrastructure and more effective social security systems, which is favorable to a more equitable growth of urban and rural incomes. Whether transfer of rural laborers to non-agricultural industries helps to narrow income disparity is verified through SRNAL .

By definition, equations (3.11), (3.12) and (3.13) have a lower boundary of zero and in such a case OLS estimators may be biased and inconsistent (Pindyck and Rubinfeld 1998). Therefore, the TOBIT procedure is used to estimate the models. The other equations are estimated with OLS or NLS methods.

Data

Our data comes from two main sources:

Provincial statistics published by the National Statistics Bureau (NSB) (2002);

Report from a study on the development of small cities and towns and transfer of rural laborers by Xian (2001).

The first source provided the basic socioeconomic indicators for the modeling work, such as GDP and labor employment by sectors, crop planting areas, urban wages and rural incomes, rural labor education, values of productive inputs into agriculture and national economy, unemployment. While it provides statistics for rural labor employment in agricultural and other industries, it does not provide information on transfer of rural laborers by type.

The research report by Xian (2001) is based on NSB special surveys on rural labor transfer in recent years. So far, the detailed data have not been made available. In the information released in the report, estimated shares of different types of rural labor transfers by provinces are reported for 1998-2000. A full matrix of inter-provincial rural labor movement is provided for 2000 only. Other relevant data from this publication include shares of different educational attainments of transferred rural laborers.

This study used the information provided by Xian (2001) to estimate the amounts of transferred rural laborers by destination. On this basis, we derive the indicators for regional labor transfer to different destinations and use them as dependent variables for empirical analysis. The explanatory variables are derived from NSB (2002).

Given the limited periods for observing interregional rural labor transfer, this study uses pooled time series and cross-section data for modeling. The dataset covers 30 provinces and municipalities (Tibet is excluded due to lack of information), for the 1998-2001 period.

4. Results

Labor productivity

The estimated results of the linear and nonlinear forms of equations are shown in Table 1. The discussion below refers to the linear version, except for where explicitly indicated.

It can be seen that, for agricultural GDP, all of the primary inputs have expected signs and are statistically significant. The results confirm that while labor input contributes to agricultural production, its marginal productivity is relatively low. The estimated parameter of the AREA variable is not very large either. It is commonly perceived that land is a critical input in agriculture, given its extreme scarcity in China. However, it can be observed from the statistics that land-scarce provinces have high agricultural output values measured in terms of either per laborer or per unit of land. The underlying factor is that these provinces have altered the structure of agricultural production towards more income-elastic farm products, such as horticulture, livestock and fishery, which depend less on land than conventional crops. In contrast, the land-rich provinces are located mainly in remote regions, where agricultural productivity is low due to inferior natural conditions and poor market development. The two regional dummy variables are not significant and are thus excluded. The results indicate that China's agricultural production presents a constant return to scale.

For the non-agricultural sector, capital assets account for a dominant share of GDP with an elasticity of 0.7. The elasticity of urban labor is about 4 times as high as that of rural transferred labor. The fact that the two types of labor force are of almost the same magnitude, implies that productivity of transferred rural labor is much lower than its urban counterpart. The results also reveal that the non-agricultural sector presents a characteristic of increasing return to scale.

The testing of labor homogeneity using the nonlinear production functions reveals that both β_1 and β_2 are significantly different from 1. Furthermore, the fact that β_1 is 1.47, β_2 is only 0.41, indicates that transferred rural laborers have higher agricultural productivity than rural farm

laborers, but lower non-agricultural productivity than their urban counterparts. The notable difference in rural labor quality may be attributed to the fact that transferred rural laborers are normally better educated and physically more capable. Though, they may still lack the knowledge and skills necessary to perform well in urban sector.

Table 1 Estimated production function of agricultural and non-agricultural GDP

Variable	Agricultural GDP		Variable	Non-agricultural GDP	
	Coef.	t-Stat.		Coef.	t-Stat.
Linear Version					
Constant	-0.204	-1.00	Constant	1.123	7.89
LOG(RL-RTL)	0.221	5.60	LOG(UL)	0.287	5.30
LOG(AREA)	0.123	2.28	LOG(RTL)	0.076	3.89
LOG(AMI)	0.675	20.36	LOG(DEP)	0.715	12.64
			ER	0.194	4.25
R2	0.960		R2	0.979	
Adjusted R2	0.959		Adjusted R2	0.978	
F-statistic	935.3		F-statistic	1093.3	
Nonlinear Version					
α_0	0.526	2.51	γ_0	1.012	7.08
α_1	0.245	6.83	γ_1	0.362	5.75
β_1	1.466	129.41	β_2	0.410	2.90
α_2	-0.049	-0.80	γ_3	0.712	11.90
α_3	0.787	26.35	γ_4	0.197	4.26
R2	0.971		R2	0.974	
Adjusted R2	0.970		Adjusted R2	0.973	
F-statistic	957.8		F-statistic	1081.8	

Note: The reported t-statistics are that after correction for heteroskedasticity using White method.
Source: Authors' calculations.

Given that transfer of rural laborers from farming to off-farm jobs contributes positively to non-agricultural GDP but negatively to agricultural GDP, it is relevant to measure the "net effect" on the national GDP. One approach is to compare marginal productivities of rural labor in farming and in off-farm works using the estimated equations. Table 2 reports the calculated marginal productivities for the three regions using the linear version of equations. Considering that the results are dependent on assumptions imposed, emphasis should be given to relative magnitudes rather than the absolute values.

The figures clearly indicate that transfer of rural farm labor to off-farm jobs can result in a sharp increase in labor productivity for all three regions. The acceleration of rural labor transfer to off-farm jobs in the past decade represents an improvement in allocation of labor resources, which contributes to the growth of China's GDP. Calculated income ratios suggest that, with given resource endowments, the eastern region offers the most attractive opportunities for non-agricultural jobs for within-region transfer of rural labor. In contrast, within-region transfer in the central region is the least attractive.

Table 2 Calculated marginal productivities of labour by type and region Unit: RMB per year per labourer

Region	Rural labour		Urban labour b
	Agriculture	Non-agriculture a	
Eastern region	1512	5759 (3.81)	23113 (4.01)
Central region	1039	3501 (3.37)	13715 (3.92)
Western region	785	2919 (3.72)	12296 (4.21)

Note: Calculated using the estimated equations at the respective regional means of the relevant variables in 2001. The numbers in parentheses are the productivity ratios of rural non-agricultural labour to that of agricultural labour. The numbers in parentheses are the productivity ratios of urban labour to that of rural non-agricultural labour. Source: Authors' calculations.

The results also reveal that, although the transfer of rural laborers from farming to off-farm activities results in a big jump in labor productivity, a large gap still remains to catch up with the productivity of urban labor. These gaps might not be attributed purely to the differences in human capital, administrative factors, such as barriers on employing rural laborers in certain urban industries, may also matter. Moreover, the incapacity of rural people should be regarded as a result of the past urban-biased development policies, which created an unfavorable environment for rural labor to development itself.

Patterns of rural labor employment and migration

Table 3 presents the results of estimated parameters of equations (3.11). All equations, except for IRLEWPOC, have high explanatory power as indicated by the obtained R².

In general, the estimated coefficients of variable LANDL are significant in all equations. As expected, they present a positive sign in the equation of farm employment and a negative sign in all other equations, indicating that scarcity of land resources can be regarded as a push-side factor for out-migration. Where there are enough land resources to work with, rural laborers may not go out for jobs.

Table 3 Estimated equations for regional patterns of rural labour employments

	Farming (IRLEA)		Off-farm jobs within township (IRLEWT)		Off-farm jobs outside township but within county (IRLEWCOT)		Off-farm jobs outside Country within province (IRLEWCOT)		Off-farm jobs outside province (IRLEOP)	
	Coef.	z-Stat.	Coef.	z-Stat.	Coef.	z-Stat.	Coef.	z-Stat.	Coef.	z-Stat.
C	2.470	8.45	-8.205	-3.38	-12.451	-6.33	5.192	2.02	4.019	1.89
LOG(LANDL)	0.155	9.97	-0.537	-4.72	-0.319	-3.04	-0.281	-2.05	-0.190	-1.71
EDRL	-0.006	-2.66	0.010	0.55	0.065	4.63	-0.054	-2.90	0.020	1.36
SNAGDP	-0.006	-4.04	0.039	3.36	0.026	2.43	0.027	1.95	-0.020	-1.78
AGDPL/ULW	0.024	0.55	0.334	1.10	-0.779	-2.61	1.039	2.66	-0.547	-1.75
LOG(HPA)	-0.004	-0.21	0.407	2.31	0.604	4.15	-0.298	-1.56	-0.442	-2.82
DNSE	0.000	-0.98	0.003	0.79	-0.006	-1.82	0.014	3.17	-0.003	-0.84
UUE	0.000	-0.53	-0.008	-2.05	-0.011	-3.13	-0.012	-2.77	0.025	7.06
UNR	-0.005	-6.91	0.034	5.95	0.013	2.87	0.006	1.02	-0.013	-2.54
R2	0.889		0.785		0.754		0.394		0.678	
Adjusted R2	0.880		0.767		0.734		0.344		0.652	

Source: Authors' calculations.

The estimated coefficients of variable EDRL are significant in equations IRLEA, IRLEWCOT and IRLEWPOC. The signs of these parameters seem to suggest that, the poorer the rural education, the more likely rural laborers work on farm or migrate to remote cities for jobs. In contrast, within county transfer prevails in regions where rural laborers are better educated

(normally economically developed regions). This finding is consistent with China's experience. In many coastal provinces where economies are prosperous and the rural educational system is advanced, rural laborers are widely employed by local TVEs or private businesses. Instead of going to distant unfamiliar cities, capable rural laborers can open their own businesses locally. These opportunities are much reduced in less developed central and western provinces where rural education is relatively poor, leading to large-scaled migration away from hometowns.

Variable SNAGDP is also significant in all equations. The signs of this variable show a regular pattern of change. Development of non-agricultural sectors can pull rural laborers away from farming as well as retain rural laborers within their home provinces for off-farm jobs. This gives an additional explanation for the distinct patterns of interregional rural labor migration.

Variable AGDPL/ULW is used to examine whether employment decisions are driven by relative incomes from farming and off-farm jobs. The results indicate that this variable is not highly significant in three of the five equations. Moreover, this variable shows an unexpected positive sign in equation IRLEWPOC. Given that China's labor market is underdeveloped, it is difficult to derive relevant wages for rural laborers in farming and off-farm jobs, and thus to verify the relationship.

The coefficients of variable HPA also present a regular pattern of change in sign. While farming is unrelated to the amount of household productive assets, the decision to out-migrate is affected by this variable. In general, while transfers within townships and counties are related positively to values of household productive assets, the variable shows a negative impact on transfers away from home counties. This implies that wealthier rural laborers tend to take off-farm jobs locally. In contrast, those who lack such assets may either continue to farm or go to distant urban areas for jobs. This suggests that, in the current social environment, migration far away from homes is not the most preferable choice.

Variable DNSE is significant only in equations IRLEWCOT and IRLEWPOC and the two coefficients are in opposite signs. The positive coefficient in the equation IRLEWPOC is consistent with expectations. State owned enterprises have long been dominant in China's urban sector, which offers limited job opportunities to rural migrants. In contrast, non-state enterprises prefer to hire low-cost rural laborers, especially in labor-intensive industries. Therefore, development of a non-state economy helps to absorb rural surplus laborers. The negative sign of this variable in equation IRLEWCOT may be attributed to the fact that rural laborers may be pulled out of their home counties when non-state economy development creates job opportunities in other areas within the same province. This signifies that development of the non-state economy plays a role in reducing migration from home provinces.

Urban sector unemployment has a strong impact on the pattern of rural labor migration as revealed by the coefficients of variable UUE. Labor for farming is not notably affected by urban unemployment. However, all types of off-farm employment within home province are related negatively to urban unemployment in the provinces. This impact tends to increase from within-township migration to within-province migration. In contrast, out-province migration is affected positively by urban unemployment in home provinces, signifying that the greater home provinces unemployment, the more rural laborers migrate to other provinces. This is a clear indication that availability of off-farm employment opportunities is a major factor rural laborers' decision to migrate. Urban-biased employment policies also ply their role in such a phenomenon.

Variable UNR is statistically significant in all equations except for IRLEWPOC. The estimated coefficients reveal that development of urbanization helps to pull rural laborers out of farming as well as to retain them within their home provinces. Therefore, acceleration of urbanization is a way to absorb rural surplus labor and to dampen large-scaled interregional movement.

The results of estimated equations of SIRLT and SURLT are presented in Table 4. Although the two dependent variables are calculated with different formulas, the coefficients show a very close pattern in terms of their signs. As expected, the distance between source and destination regions has a negative impact on the intensity of interregional migration. The positive signs of variables NAGDPs and NAGDPd mean that the larger the non-agricultural economies in source and destination regions, the more rural laborers move between them. Therefore, interregional migration of rural laborers presents a pattern similar to that described by the so-called "gravity model". The negative sign of variable LANDLs verifies again that limited availability of land

resource in source regions is a push-side factor for migration. Growth of the agricultural sector in source regions may dampen out-migration as implied by the negative coefficient of variable AGDPGs. Development of a non-state economy in both source and destination regions does not show significant impacts on interregional migration, although a positive relationship is expected in the former. The average educational attainment of rural labor in source regions (EDRL) has a significant negative coefficient. This result is consistent with that obtained from the rural labor employment models discussed above. The coefficients of urban wage rates in both source and destination regions are statistically significant. As expected, the coefficient is positive for ULWs and negative for ULWd, implying that pursuance of high earnings is a driving force for movement of rural laborers cross provinces. The negative coefficient of variable UUEs means that the higher the unemployment in source regions, the more rural laborers move out of their home provinces. On the other hand, high unemployment in destination regions retards migration of rural laborers from other provinces. Development of urbanization in source regions may help to check out-migration as implied by the significant negative coefficient of variable UNRs. The coefficients of dummy variable GD are positive and highly significant, which reflects the fact that nearly half of the inter-provincial migrants are concentrated in Guangdong Province.

Table 4 Estimated equations for inter-provincial migration of rural labourers

Dependent variable	RSRLT		NSRLT	
	Coefficient	z-Statistic	Coefficient	z-Statistic
C	6.207	4.43	36.664	3.91
LOG(DISTsd)	-0.172	-10.49	-1.215	-10.82
LOG(NAGDPs)	0.110	5.50	0.606	4.56
LOG(NAGDPd)	0.024	1.69	0.157	1.61
LANDLs	-0.065	-2.39	-0.368	-2.03
AGDPGs	-0.016	-3.68	-0.096	-3.32
DNSEs	0.000	0.38	0.000	0.04
DNSEd	0.000	-0.35	-0.002	-0.47
EDRLs	-0.028	-3.05	-0.173	-2.80
LOG(ULWs)	-0.277	-3.25	-1.403	-2.45
LOG(ULWd)	0.113	2.16	0.761	2.12
UUEs	0.001	2.44	0.011	2.63
UUEd	-0.001	-2.06	-0.009	-2.01
UNRs	-0.005	-2.44	-0.035	-2.41
UNRd	0.001	1.13	0.006	0.98
GUANGDONG	0.691	13.68	4.862	14.03
R2	0.434		0.422	
Adjusted R2	0.423		0.411	
Total observations used	870		870	

Source: Authors' calculations.

The above models reveal that both pull-side and push-side factors affect rural labor employment and migration. The direction and scale of rural labor transfers are driven primarily by economic factors, although current policies and social infrastructure also play important roles.

Social impacts

The results of the two estimated equations are presented in Table 5. Household productive assets, land resource and human capital are important determinants for the level of rural per capita net income. However, the estimated coefficients imply that land resource cannot contribute much to income when per labor land holding is limited as is the case in most of China. Therefore, farmers have to rely on off-farm jobs to earn additional income. This is confirmed by the positive and highly significant coefficient of variable SRNAL. The coefficients of both ER and CR are positive and statistically significant. Their magnitude implies that income-earning capacity of rural households is highest in East China and lowest in West China. Such remarkable differences may be attributed to the difference in agronomic conditions, infrastructure and socioeconomic institutions.

Table 5 Impacts of rural labour transfer on rural net income and urban-rural income disparity

Log (RNI)			URIR		
Variable	Coefficient	t-Statistic	Variable	Coefficient	t-Statistic
C	5.335	12.72	C	-6.098	-2.24
LOG(HPA)	0.057	2.37	LOG(PGDP)	1.184	3.83
LOG(LANDL)	-0.365	-12.07	1/PGDP	3.456	2.58
LANDL	0.805	13.40	LANDL	-0.790	-4.52
EDRL	0.005	1.64	UUE	-0.005	-1.86
SRNAL	0.016	14.13	UNR	-0.010	-2.24
ER	0.280	9.15	SRNAL	-0.030	-4.85
CR	0.113	3.86	ER	-1.225	-10.21
R2	0.944		CR	-0.770	-9.19
Adjusted R2	0.940		R2	0.757	
F-statistic	268.2		Adjusted R2	0.740	
			F-statistic	44.2	

Note: The reported t-statistics are those after correction of heteroskedasticity with White method. Source: Authors' calculations.

In the URIR equation, the obtained coefficients of LOG(PGDP) and 1/PGDP are both positive. It can be calculated from the estimated coefficients that, *ceteris paribus*, urban-rural income disparity tends to be narrowed first and then enlarged with growing per capita GDP. Given that, with the exception of Guizhou, the per capita GDP in all provinces is much higher than the calculated turning point (3624 Yuan – US\$440), China's income distribution is worsening with economic growth. Such a situation is understandable since China's economic growth has been primarily driven by the expansion of secondary and tertiary industries in the urban sector. The negative coefficient of variable LANDL means that when farmers have more land to work with, they improve their income earning ability, which in turn helps to narrow the income gap. The variable UUE works in an opposite way as implied by its negative coefficient. That is, the higher urban unemployment, the lower urban income and the smaller rural-urban income disparity. Urbanization also helps to reduce income disparity. The transfer of rural laborers to off-farm undertakings makes an important contribution to the reduction of income disparity. The regional dummy coefficients indicate that unemployment is higher in less developed regions.

5. Conclusions and implications

Since the late 1970s, the Chinese economy has grown rapidly, but urbanization has lagged. At present, nearly one-half of China's labor force is classified as agricultural laborers, but the agricultural sector makes up only 15% of the national GDP. Underutilization of rural laborers means low rural income. Over the past two decades, nearly one-third of rural laborers transferred to non-agricultural seasonal or year round work, resulting in a significant rise in rural income and economic growth for China. Changing from rural to urban residency status remains difficult. China's urban and rural socioeconomic development is not integrated, resulting in a wide range of problems, such as slow rural income growth, growing urban-rural income disparity, underdeveloped rural infrastructure and social services, growing crime in both urban and rural areas, rural public health hazards, greater pressure on the transportation system from large scale seasonal movement of the "floating population", and conflicts between urban residents and rural migrants.

This study finds that transferring rural labor from agriculture to non-agricultural jobs results in a significant improvement in the marginal productivity of labor, suggesting that policies that keep rural labor on land may lead to loss of national GDP.

Results reveal that both pull-side and push-side factors are relevant to rural labor transfer patterns. Rural laborers are pulled out of farming by opportunities to earn additional incomes from off-farm jobs. The scarcity of land resources pushes rural laborers away from farming. However, while working in towns and cities may raise household incomes, this gain must be traded off with the cost of migration. The costs are not limited to those associated with the physical movement of people between source and destination, but include uncertainty in finding and keeping jobs, working in an unfriendly environment, abandoning family life or working and living in awful conditions. More importantly, access to urban social services by rural migrants is severely limited. Under present circumstances, it may not be the most desirable choice for rural laborers to go to distant towns and cities for jobs.

It is confirmed that the growth of agricultural production helps to keep rural laborers on farm and thus reduce interregional migration. In this sense, agriculture generates a positive externality for the urban sector. However, given the resource endowments of rural households and agricultural market conditions, marginal costs of production tend to increase rapidly so there is little hope for rural people to raise their income through farming. Policies that keep rural people on their land will inevitably result in a growing polarization of urban and rural societies and associated social tensions. More importantly, they may contribute to a decline in rural education and other social services, retard rural household accumulation of physical and human capital, weaken fiscal capacity of local governments in agricultural regions, and overlook rural infrastructure development. This study reveals that the level of rural income is related positively to the scale of rural labor transfer to non-agricultural employment, which in turn plays a role in reducing urban-rural income disparity. Given that urban-rural income disparity is a major cause for social disorder, both the growth of agricultural production and the transfer of rural laborers to non-farm sector can contribute positively to social stability.

While there are problems deriving from excessive urbanization, retaining rural laborers on land may have more negative overall social consequences. Policies that help to remove obstacles to migration are likely to be conducive to social viability. The real decision that the Chinese government needs to make is not whether to allow the rural people moving to cities or not, but how to manage the process so as to avoid undesirable consequences. Transfer of rural labor to non-agricultural employment will create favorable conditions for a structural adjustment of agriculture and the rural economy, such as farm land consolidation, scaled farm production and growing rural market demand. The gradual transfer of rural people to towns and cities is a necessary step in achieving coordinated urban-rural development, which in turn determines long-term social stability. To achieve this, it is necessary to fundamentally reform the policy-making process, laws and social infrastructure, as well as to empower rural people through improving rural education and vocational training.

The transfer of rural labor depends on regional socioeconomic conditions as well as household attributes. The real poor in remote regions are less likely to migrate because of high costs and risks. If they do migrate, they are also less likely to succeed in the competitive labor market.

Therefore, at the current stage of development, while it may raise rural income, migration may not alleviate rural poverty. Complementary measures need to be taken with the transfer of rural labor, such as the creation of income safety nets.

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