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## Social Sciences in China

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t792221890>

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Online publication date: 28 July 2010

**To cite this Article** Ligang, Song , Jiang, Wu and Yongsheng, Zhang(2010) 'Urbanization of Migrant Workers and Expansion of Domestic Demand', Social Sciences in China, 31: 3, 194 — 216

**To link to this Article:** DOI: 10.1080/02529203.2010.503080

URL: <http://dx.doi.org/10.1080/02529203.2010.503080>

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## **SPECIAL ISSUE: URBANIZATION AND EMPLOYMENT OF MIGRANT WORKERS IN CHINA**

### **Urbanization of Migrant Workers and Expansion of Domestic Demand<sup>1</sup>**

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本文从一般均衡的视角，揭示农民工市民化与扩大内需的关系。中国之所以要立足内需发展经济，应对外需下滑只是一个短暂的原因，其根本原因在于改变当前经济内外失衡和产业结构失衡的“双失衡”格局，以及充分利用国内市场优势更好更快实现工业化的需要。如果采取切实措施加快农民工市民化进程，则其潜在的消费需求就可以充分释放出来。这不仅有助于抵消外需下滑对经济增长的负面影响，而且有助于中国经济摆脱“双失衡”格局，全面提升中国工业化和城市化水平。

**关键词：**农民工市民化 扩大内需 中国经济

This paper explores, from the perspective of general equilibrium, the relationship between urbanizing migrant workers and increasing domestic demand. Why should China adopt the strategy of relying on domestic demand to develop its economy? Countering the impact of declining external demand is only a temporary reason for doing so, and the more fundamental reason is the need to change the “dual imbalance” in today’s economy: the imbalance between internal and external economic arrangements and the industry structural imbalance, as well as the need to take full advantage of the domestic market to achieve the goal of industrialization. The latent consumption demand of migrant workers will be fully released if realistic measures are taken to accelerate the pace of turning migrant workers into urban residents. This will help neutralize the negative impact of reduced external demand, as

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1 Contact e-mail: zys@drc.gov.cn (Yongsheng Zhang). The authors owe their thanks to Professors Cai Fang and Du Yang for providing survey data on the labor market and to Professor Zhang Dingsheng for his comments and advice on the first draft of this paper. Naturally the authors bear responsibility for all errors in this paper.

well as rectifying the structural imbalances in the Chinese economy and upgrading China's industrialization and urbanization.

**Keywords:** urbanization of migrant workers, increase in domestic demand, Chinese economy

## I. Introduction

China first recognized the need to expand domestic demand in the wake of the 1997 Asian Financial Crisis. As a result of this crisis, China's exports plummeted and some export-oriented commodities had to turn to the domestic market for a way out. The global financial crisis in 2008 once again made China's exports plunged and thus the question of how to stimulate domestic demand to maintain GDP growth became a new focus of attention. It seemed as though China had decided to expand domestic demand mainly to offset the impact of inadequate demand from overseas markets. Some appealing but unfounded arguments have been advanced in relation to the reasons, implications and means of expanding China's domestic demand. For example, some argue that there is a zero-sum relationship between internal and external demand, some believe that exports should be reduced while domestic demand is increased, while others advocate the rural market as the keystone of increasing domestic demand.

Why then should China rely on domestic demand to develop its economy? To cope with declining external demand is merely a temporary reason. The fundamental reasons for doing so are to change China's unbalanced industrial structure and internal-external economic arrangements and to take full advantage of the domestic market to develop the economy. On one hand, the internal-external imbalance represented by the huge trade surplus has given rise to enormous foreign exchange reserves, pressure for RMB appreciation, asset bubbles, a deteriorating environment and other problems. This model of unbalanced growth will be hard to sustain.<sup>2</sup> On the other hand, China's domestic market, with its great potential, is able to furnish powerful support for China's industrialization, but for various reasons its advantages have not yet been fully exploited. Therefore, it is not only necessary but also feasible for China to move from its longtime unbalanced growth model to a balanced model that puts more emphasis on domestic markets.

Expansion of domestic demand can be understood from two perspectives. One is the economic growth perspective. For instance, as the economy develops, market demand will increase naturally. The other is the perspective of internal-external imbalances and declining exports. For example, a substantial part of China's supply was originally oriented to meet external demand, but this will be absorbed to some extent by increased domestic

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2 H. McKay and L. Song, "China as a Global Manufacturing Powerhouse: Strategic Considerations and Structural Adjustment," pp. 1-32.

demand. Thus expanding domestic demand, in the second perspective, involves a change in the supply-demand structure, but not necessarily in aggregate supply. The first kind of expansion of domestic demand, being more involved with changes in aggregate supply, is an issue of economic growth that needs to be addressed through industrialization and urbanization. Correspondingly, we can categorize domestic demand into Type I domestic demand correlated with economic growth and Type II domestic demand that substitutes for external demand.

Why, then, may these two kinds of domestic demand be inadequate? The inadequacy of Type I demand is of course related to a low level of economic development. For example, with poor rural productivity, or in other words, low rural supply, farmers will have correspondingly low levels of demand—"The less they sell, the less they buy." To raise their consumption capacity, we need in the first place to increase their earnings, which in turn will lead to new supply. Therefore stimulating demand among farmers is essentially an issue of industrialization, urbanization and economic growth in rural areas, rather than simply an issue of raising famers' consumption rate. In the long run, rural economic growth (i.e. the expansion of the rural market) will play a role in readjusting China's economic structure: for one thing, it will provide a sizable market for the "surplus" supply of manufacturing industry and for another, it will create new supplies for the unmet demand of urban residents, and consequently correct the unbalanced economic structure. However, in the short term expanding the rural market will do little to solve the problem of reduced external demand unless the government directly subsidizes the farmers.

Type II demand is related to China's unbalanced internal-external economic arrangements and the underlying market distortion. China's export-oriented manufacturing supply structure is to a great extent designed to provide effective supply for overseas markets. Domestic supply is not only structurally out of alignment with domestic demand, but also, in the sense of total quantity, much higher than domestic demand. This unbalanced growth model is not sustainable in the long term; and in the short term, any fall in external demand will directly affect China's economic growth unless the supply oriented to overseas markets can find corresponding demand in the domestic market, something that is unfortunately very difficult. First, urban residents are unlikely to consume additional manufactured goods should exports decline; the services they need are often in a short supply because of monopolies, but are unlikely to be provided by imports. Second, migrant workers in urban areas have some actual purchasing power, but urban-rural barriers render it hard for them to obtain full rights as true urban citizens, and this accordingly impedes their consumption capacity.<sup>3</sup> For example, without permanent homes, they are reluctant to buy televisions, refrigerators and other major appliances.

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<sup>3</sup> See Han Jun, *Research on Strategic Issues Concerning Migrant Workers in China*; Cui Chuanyi, *Institutional Innovations in the Employment and Urbanization of Chinese Migrant Workers*.

If there were no institutional distortion and factors of production could flow completely freely and form a perfect factor market, then the economic structure characterized by the dual imbalance described above would be impossible, and an economy with fully developed domestic demand and a balanced internal-external structure would come into existence. By analyzing the implications of domestic demand, we intend to illuminate the significance of accelerating the urbanization of migrant workers for the expansion of China's domestic demand. In the following section, we adopt a simple model assuming the existence of an undistorted market in order to show that the dual imbalance would be impossible if farmers were able to move freely into the cities and non-agricultural sectors and migrant workers were fully urbanized. This can be regarded as China's ideal mode of economic operation, or the ultimate goal that reform, especially reform of the factor market, aims to achieve. In the third section, we introduce the institutional factors preventing the urbanization of migrant workers and see how they impose restrictions on economic growth and improvement of the economic structure. A comparison of the results in the second and third sections shows the significance of urbanizing migrant workers for the expansion of domestic demand and economic growth in China. We will also look into issues including strategies for and effects of increasing consumption of farmers and urban residents. In the fourth section, we use the data obtained from a large-scale survey of urban residents and migrant workers to carry out econometric tests and compare the consumption modes of urban residents and migrant workers, with a view to illustrating the positive impact of migrant workers' urbanization upon the expansion of China's domestic demand. The final section contains conclusions and policy implications.

## II. Model

First, we use a simple dual sector model assuming producers are at the same time consumers to consider the situation when there is no market distortion. Suppose an economy consists of two sectors, i.e. rural and urban. Every decision maker is both a producer and a consumer;<sup>4</sup>  $x$  stands for the necessities of life (food, etc.) and  $y$  for industrial products. Farmers produce the necessities of life  $x$ , some of which they consume, and purchase  $y$  from urban residents. Urban residents produce  $y$ , some of which they consume, and purchase  $x$  from farmers. Subscripts 0 and 1 represent farmers and urban residents respectively. We assume that people move freely between rural and urban areas and have unrestricted access to every occupation; migrant workers enjoy full urban residence rights and are no different from the original urban residents in both production and consumption. "Urban residents"

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<sup>4</sup> For the model methodology, see X. Yang, *Economics: New Classical Versus Neo-classical Framework*. The model in this paper is merely used for applied analysis; for convenience, we only consider the structure with division of labor, while excluding the theoretical possibility of an autarky structure.

here thus comprises the original urban residents and urbanized migrant workers. We use  $M$  to denote the total population.  $M_0$  and  $M_1$  are the sum of farmers and permanent urban residents respectively.

### 1. The rural sector

$$\text{Max } U_0 = x_0^{1-\beta} (y_0^d)^\beta \quad (1)$$

$$\text{s.t. } x_0 + x_0^s = Al_x^a, 0 < A < 1 \quad (2)$$

$$l_x = 1 \quad (3)$$

$$p_x x_0^s = p_y y_0^d \quad (4)$$

Equation (1) is the utility function.  $x_0$  represents agricultural products for the individual farmer's own consumption,  $x_0^s$  is agricultural products for sale,  $y_0^d$  is the industrial products the farmer buys on the market. Equation (2) is the production function.  $a>1$  refers to a parameter for increasing returns of production specialization;  $A$  is the production technology coefficient;  $0<A<1$  indicates that the farmers' production technology level is lower than the level of production technology of urban residents which is 1.  $l_x$  stands for the time a farmer allocated in the production of  $x$ . Since we only discuss a completely specialized division of labor structure here, the labor input is then the farmer's whole labor force. Equation (3) means that each farmer has one unit of time endowment. Equation (4) denotes the budget constraint.  $P_x$  and  $P_y$  are the prices of  $x$  and  $y$  respectively. For simplicity, we define agricultural products  $x$  as the numeraire and let  $P_x=1$ . We obtain the following results for a farmer's maximum level of utility:

$$x_0^s = \beta A \quad (5)$$

$$x_0 = (1-\beta)A \quad (6)$$

$$y_0^d = \frac{\beta A}{P_y} \quad (7)$$

$$U_0 = \frac{A(1-\beta)^{1-\beta} \beta^\beta}{P_y^\beta} \quad (8)$$

### 2. The urban sector

$$\text{Max } U_1 = (x_1^d)^{1-\beta} y_1^\beta \quad (9)$$

$$\text{s.t. } y_1 + y_1^s = l_{y1}^a = 1, \quad (10)$$

$$p_y y_1^s = p_x x_1^d, \quad (11)$$

Equation (9) represents the utility function of the urban resident, (10) the production function and time endowment and (11) the budget constraint.  $x_1^d$  stands for a urban resident's demand for agricultural products,  $y_1$  for the amount of industrial products for a urban resident's own consumption and  $y_1^s$  for the amount of industrial products for sale. In calculating the maximum level of utility for a urban resident, we obtain the following results:

$$y_1^s = 1 - \beta \quad (12)$$

$$y_1 = \beta \quad (13)$$

$$x_1^d = (1 - \beta)p_y \quad (14)$$

$$U_1 = (1 - \beta)^{1-\beta} \beta^\beta p_y^{1-\beta} \quad (15)$$

Under our assumptions, institutional barriers and industry entry restrictions do not exist between rural and urban areas; farmers are free to become permanent urban residents and moreover can enjoy all the social welfare entitlements of the original urban residents. In accordance with the conditions for utility equalization and market clearing, we can obtain the equilibrium results.

The condition for utility equalization is:

$$U_0 = U_1 \quad (16)$$

In accordance with Walras' Law, we may take into consideration only one of the two products under market clearing conditions. Here we use the market clearing conditions of  $y$  product to obtain a result:

$$M_1 y_1^s = M_0 y_0^d \quad (17)$$

From Equation (16) we obtain the price. Substituting the price in the indirect utility functions of the two kinds of producer-consumers, we can calculate their respective direct utility functions:

$$p_y = A \quad (18)$$

$$U_0 = U_1 = A^{1-\beta} \beta^\beta (1 - \beta)^{1-\beta} \quad (19)$$

Substituting Equation (18) in (17), we can find the relationship of the rural and urban (including migrant workers) populations:

$$(1 - \beta)M_1 = \beta M_0 \quad (20)$$

Because  $M = M_0 + M_1$ , we can write

$$M_0 = (1 - \beta)M \quad (21)$$

$$M_1 = \beta M \quad (22)$$

The above results indicate that: first, due to unrestricted urban-rural migration and free entry to all occupations, migrant workers can gain full urban status and hence the "dual imbalance" problem does not exist in this model. According to Equation (17), domestic supply can be completely cleared by domestic demand; economic development is based entirely on domestic demand, rather than on huge net exports. It should be especially noted that for convenience, the model does not incorporate specifically international trade even though international trade has the advantages of promoting the division of labor and enhancing productivity. The effects of net exports will be discussed in the extended three-sector model developed in the next section.

Second, because there is free movement of labor between urban and rural areas and free entry to different industries, we can infer from Equation (20) that it is the market that endogenously determines the ratio of labor force employed in industry and agriculture and of the urban and rural populations. The real income of the rural and urban populations is

equalized. This model will consequently rule out the emergence of such problems as the urban-rural disparity and industry structure.

Third, based on the individual production function of each producer-consumer and the aggregate market supply and demand functions given in Equation (17), we find that increases in supply and demand are essentially different aspects of the same thing. An increase in demand is the premise of an increase in supply, and vice versa; therefore there is no need to simply emphasize expansion of domestic demand.

Finally, even if the labor productivity of farmers is lower than that of urban residents ( $0 < A < 1$ ), farmers can have the same level of income as urban residents because free urban-rural migration and the urbanization of migrant workers will result in a relative change in price relations between agricultural and industrial products. This means that a fully developed market integrating urban and rural areas will be effective in raising farmers' incomes. This implies that raising farmers' incomes need not depend solely on enhanced agricultural productivity and government subsidies.

### **III. Model Extension and Discussion**

#### *1. Model extension*

The model above mentioned represents the ideal outcomes obtained when migrant workers are fully urbanized, being able to move freely between urban and rural areas and enter any industry. Due to various institutional barriers, however, the Chinese economy's actual circumstances are quite different from the above assumptions and as a result China's economic performance is also very different from the ideal situation. Data from the Fifth Population Census shows that about 170-180 million rural workers have migrated to the cities, but owing to China's household registration (*hukou*) system and the associated social welfare burdens, most of them remain "migrant workers" and fail to obtain full status as permanent urban residents.<sup>5</sup> Among the 600 million city dwellers, 27 percent live in the city but are still registered as farmers (that is, they have a rural *hukou*).<sup>6</sup> According to Han Jun,<sup>7</sup> among the most conspicuous problems encountered by migrant workers are difficulty in getting an urban *hukou* (i.e. being officially registered as an urban resident), an incomplete system of labor rights protection, not having equal access to urban public services, being excluded from the urban housing guarantee system, having no effective protection for their social welfare rights and the absence of democratic rights, as well as the serious problems faced by their left-behind children, womenfolk and old people. Migrant workers live in very poor conditions, with no certainty in either their lives or their work. In these circumstances, they have neither

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5 Cai Fang, Du Yang, and Wang Meiyun, *The Political Economy of Labor Mobility*.

6 Han Jun, "Chinese Rural Population to Decrease to 400 Million in Thirty Years."

7 Han Jun, *Research on Strategic Issues Concerning Migrant Workers in China*.

the ability nor the desire to consume, and are forced to save most of their income or remit it to their villages.<sup>8</sup> For analytical convenience, we make a theoretical abstraction of their consumption model, assuming they spend money only on basic consumer goods  $x$  and not on industrial products  $y$ .

In this section we compare the ideal and actual situations with a view to revealing the effect on the expansion of domestic demand of urbanizing migrant workers (giving them the status of permanent urban residents or citizens) by eradicating institutional distortions. If this cannot happen, then the urban population  $M_1$  should be divided into permanent urban residents  $M_{11}$  and migrant workers  $M_{12}$ , the two types of producer-consumers. The decision-making system of urban residents here is the same as that above, but that of urban migrant workers is very different. In this way, this section employs a three-sector model (unlike the two sector model above) that includes farmers, permanent urban residents and migrant workers to describe an economy characterized by institutional distortions. In this model, farmers produce agricultural products, and permanent urban residents and migrant workers produce industrial products. The decision systems of farmers and permanent urban residents are exactly the same as in the above model. Migrant workers have the same production function as permanent urban residents, but their consumption model is very different.

Migrant workers in the cities have the following decision-making system:

$$\text{Max}U_2 = x_2^d \quad (23)$$

$$\text{s.t. } y_2^s = l_{y2}^a = 1, \quad (24)$$

$$p_y y_2^s = p_x x_2^d + s p_y y_2^s, \quad (25)$$

where Equation (23) is the utility function, (24) is the production function, (25) is the budget constraint and  $x_2^d$  represents their demand for agricultural products. In reality, because it is hard for them to become fully permanent urban residents, migrant workers choose to save a large portion of their earnings or remit them to their villages. We use  $s$  to denote the proportion of involuntary savings. For a clearer theoretical analysis, we assume that migrant workers only satisfy their basic consumption needs for food and clothing, etc. and do not consume industrial products. All the  $y$  they produce are for sale, with part of the income from the sales being used to buy necessary agricultural products and the rest going to savings. We use  $y_2^s$  to denote the products sold by migrant workers and  $s$  for the share of their involuntary savings. Maximizing the utility of migrant workers, we obtain the following results:

$$x_2^d = (1-s)p_y \quad (26)$$

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<sup>8</sup> Du Yang, Robert G. Gregory and Meng Xin, "Impact of the Guest-Worker System on the Poverty and Well-being of Migrant Workers in Urban China," pp. 172-202.

$$y_2^s = 1 \quad (27)$$

$$U_2 = (1-s)p_y \quad (28)$$

This three-sector model assumes that the conditions for farmers and permanent urban residents are identical with those in the dual sector model, so we have the following market-clearing condition for  $Y$ :

$$M_{11}y_1^s + M_{12}y_2^s = M_0y_0^d + Y^e \quad (29)$$

where  $Y^e$  represents net external demand. Putting values for  $y_1^s, y_2^s, y_0^d$  into the above equation, we have relations for  $p_y, M_0, M_{11}, M_{12}$  and  $Y^e$ :

$$p_y = \frac{M_0\beta A}{(1-\beta)M_{11} + M_{12} - Y^e}$$

Because  $M = M_0 + M_{11} + M_{12}$ , therefore

$$p_y = \frac{\left(\frac{M}{M_{12}} - t - 1\right)\beta A}{(1-\beta)t + 1 - \frac{Y^e}{M_{12}}} \quad (30)$$

Suppose  $t = \frac{M_{11}}{M_{12}}$  represents the level of urbanization of migrant workers. The smaller the value of  $t$ , the lower their level of urbanization and vice versa. Substituting  $t$  into and reducing equation (30), we have:

$$p_y = \frac{\left(\frac{M}{M_{12}} - t - 1\right)\beta A}{(1-\beta)t + 1 - \frac{Y^e}{M_{12}}} \quad (31)$$

Let  $k = \frac{M_{11} + M_{12}}{M_0}$ , representing the level of urbanization of the society as a whole. The larger this coefficient, the higher the level of urbanization and vice versa. Introducing  $k$  into and reducing Equation (31), we obtain this expression:

$$p_y = \frac{(tk + k)\beta A}{(1-\beta)t + 1 - \frac{Y^e}{M_{12}}}$$

Note that in order to get a clearer picture of the problems caused by the present institutional barriers and for greater simplicity, we have put some ad hoc assumptions to this model. For instance, we assume migrant workers have some involuntary savings. In a state of equilibrium, the supply corresponding to these savings is consumed by overseas markets, giving rise to China's high level of domestic supply and high growth. If we treat savings as an endogenous variable and introduce this into overseas markets, the model will become very complex. Such being the case, we are not able to get a fixed explicit solution to equation (30), but can only demonstrate the key relations between these variables

contained in this modeling framework. From the above equation, we can draw the following inferences.

First, Equations (29) and (30) indicate that a fall in external demand must lead to either a fall in aggregate domestic supply or deflation. A fall in aggregate supply means an economic contraction.

Second, a comparison with the dual sector model will show that if migrant workers cannot become full urban citizens, their consumption will be constrained. Market clearing will then rely heavily on net external demand  $Y^e$ , leading to an export-oriented development model characterized by internal-external imbalances; but if they do become urbanized, they will have the same consumption model as the original urban residents. Their greatly increased demand will enable China to achieve economic development even without net external demand. It should be noted that zero net external demand does not mean a decrease in the aggregate amount of international trade.

Third, the indirect utility function in Equation (28) indicates that institutional distortions render it hard for migrant workers to obtain full urban citizenship. Therefore, they have no choice but to make involuntary savings, reducing their immediate utility. Since involuntary savings are not endogenously determined by the market, the discounted total utility of migrant workers then could not be maximized. And if they can never gain the status of permanent urban residents, it will be hard to turn these savings into real utility. This means that despite China's rapid economic growth, the migrant workers who account for a considerable proportion of the Chinese population are not able to fully enjoy the benefits resulting from it.

Finally, part of the income of migrant workers is obtained from exports, so their savings correspond to some extent to foreign exchange reserves. This implies that for various reasons, Chinese migrant workers cannot consume; they have no choice but to lend money to developed countries, whose households are thus able to consume on overdraft. This is a precise depiction of the unbalanced state of the Chinese, American and even global economies.

## *2. Discussion*

When exports decline, it is necessary to expand domestic demand in order to maintain stable economic growth. Domestic demand in this sense consists of the demand of farmers, urban migrant workers and permanent urban residents. On the basis of the above results, we show how these different types of demand can be expanded and what the effects of the expansion will be.

(1) Impact of the urbanization of migrant workers upon economic growth and the structure of the economy

The urbanization of migrant workers will affect economic growth and the structure of the economy in the following ways. First, it will result in changed consumption behavior, leading to increased domestic demand and substitution of external demand. For example,

if migrant workers can settle down in the cities and purchase large quantities of household appliances in the same way as permanent urban residents, the household appliance industry will no longer need to be over-reliant on exports. Second, urbanized migrant workers will have increased demand, facilitating the development of related industries. Third, to urbanize migrant workers, the government has to invest enormous financial resources into public services such as education, public health, social welfare, low-rent housing, urban infrastructure, etc., and this will promote economic development. Fourth, urbanizing migrant workers will increase effective supply and foster the rational development of China's economic structure. If migrant workers obtain urban citizenship and are free to enter different industries, this will accelerate the development of urban services which are in short supply. Increasing supply in accordance with market demand will expedite the rationalization of China's economic structure. Fifth, it will advance rural economic growth. Barriers to the urbanization of migrant workers have a negative influence not only on their desire to consume but on the further migration of the rural labor force to the cities, increases in rural labor productivity and the further development of the rural economy.<sup>9</sup> Conversely, the urbanization of migrant workers will greatly accelerate China's industrialization and urbanization, resulting in a leap forward for the rural economy.

If the increasingly large group of unemployed college graduates from rural areas is included as migrant workers in the broader sense, the urbanization of migrant workers will have a still more marked effect on China's economic development and on correcting the dual imbalance in the Chinese economy. Despite their higher education, these graduates from the countryside encounter great difficulties in obtaining *hukou* in some big cities and finding a job. They have been detached from their rural hometowns but are not yet entirely urbanized. If they are allowed to migrate freely and are free to enter any industry, especially in the high-end service sectors, these graduates will, on the one hand, provide emerging services currently in short supply in China, remedying the imbalance in the service and manufacturing industries, and on the other, create new demand for manufacturing industries now burdened with excess capacity, thereby providing a partial substitute for net external demand and correcting the internal-external imbalance in the Chinese economy. Of course, the Chinese economy will get an enormous boost from their entry into emerging service industries.

## (2) Ways of expanding rural demand and effects of the expansion

According to Equation (4), farmers' demand for industrial products is  $y_0^d = \frac{p_x x_0^s}{p_y}$ . This means that any increase in their demand must be premised upon an increase in their supply; in other words, it is impossible to increase their demand without first increasing their supply. Such being the case, the current problem of a fall in external demand cannot be solved by increasing farmers' demand, for it will necessarily beget corresponding

<sup>9</sup> Cai Fang and Bai Nansheng, *Flow of Labor in Transitional China*.

supply. The simultaneous expansion of farmers' supply and demand is in essence a matter of the quantitative expansion of economic growth. As ours is not a growth model, we turn to comparative static analysis to simulate the effects of economic growth. Suppose that production technology parameter A and specialization effect parameter in the farmer production function, for some reason, increase over time; this increase, according to equations (2) and (4), will lead to an increase in both supply and demand for farmers and a corresponding expansion in China's domestic market volume (in macroeconomics, this is expressed as a rise in GDP).

What impact will economic growth in rural areas have on China's unbalanced economic structure? If the rural economic growth represented primarily by de-agriculturalization gives rise to a new type of supply structure that meets urban residents' demands (e.g. service industries), then on the one hand, it will satisfy urban residents' effective demand for services and commodities alike; and on the other, it will increase demand for industrial products and absorb the present "surplus" or "excessive" production capacity. This will be beneficial for the Chinese economy's structural adjustment and for gradually winding down China's excessive reliance on external demand. With the rapid development of the Chinese economy and the resultant progressive expansion of demand, many production capacities that are now apparently "surplus" will no longer be so.

In the short term, how can we make up for the decline in external demand by expanding the rural market? If we require only that farmers should increase demand without increasing supply, the government will have to provide subsidies or persuade them to use their savings on consumption. We now adjust the farmers' budget constraint in equation (4), adding at left item  $r$  representing government subsidies or remittances from migrant workers; then the modified consumption function can be written as  $y_0^d = \frac{p_x x_0^s + r}{p_y}$ . This suggests that if they can obtain government subsidies or migrant worker remittances, farmers will increase their demand for industrial products, hence neutralizing to some extent the negative impact of falling external demand.

In short, farmers will consume more industrial products if the government gives them subsidies, as in the policy of "household appliances for the countryside (*JiaDianXiaXiang*)."  
This increase in domestic demand will have a direct effect on resolving the problem of declining export demand. The alternative is that migrant workers remit some income back to the countryside, or farmers have their own savings, but for multiple reasons, these funds cannot be used for real consumption. For instance, deficiencies in rural electricity and water infrastructure make it hard for farmers to use some electrical appliances (e.g., it is impossible to use a washing machine without tap water or electrical devices without electricity), and thus related demand remains unsatisfied. In addition, limited purchase channels, an imperfect social welfare system and other factors combine to prevent farmers from consuming more industrial products. Farmers' latent demand must be addressed in order to solve the problem

of falling external demand by expanding the rural market. The current strategies adopted by the Chinese government, such as the “household appliances for the countryside” scheme, will bring about some positive effects.

### (3) Means and effects of expanding demands of urban residents

Services are excluded from the above models to avoid complications. But actually the dual imbalance in the Chinese economy is closely related to the shortage of services. Many crucial service industries (such as public health, education, banking and insurance) are monopolized by a few state-owned sectors. As a result, the services provided by these sectors are often in short supply; the service industry accounts for a much lower percentage in China than in developed countries, and is even markedly lower than in most developing countries with the same income level, thus resulting in China’s “unbalanced” economic structure. As far as urban residents are concerned, their demands on manufacturing industry have mostly been met, but their consumption demand for services has not been satisfied owing to the scarcity arising from monopolies. Therefore, like migrant workers, urban residents also have involuntary savings that play a role in driving up China’s savings rate. A substantial portion of these savings also corresponds to China’s foreign exchange reserves. Thus because of institutional distortions, Chinese urban residents, like migrant workers, fail to fully enjoy the benefits of the high growth of the Chinese economy.

Now we introduce into the model a type of service provider and assume it has the same decision-making system as urban residents. Here  $z$  represents the service industry and subscript 3 represents the service provider. We assume monopoly service industries have been completely opened to all providers. Then the budget constraint of that service provider is  $p_z z^s = p_x x_3^d + p_y y_3^d$  and the decision function of demand for industrial products is  $y_3^d = \frac{p_z z^s - p_x x_3^d}{p_y}$ . The service provider not only supplies services to satisfy demand in other sectors, but also creates demand for industrial and agricultural products that will substitute for part of external demand. This implies that a fully-fledged service industry will: (a) give an impetus to China’s economic development, in that the aggregate supply and demand of society as a whole will rise; (b) enlarge the share of the service industry and correct the unbalanced domestic economic structure, and (c) increase demand for export-oriented products to correct the problem of the internal-external imbalance in the Chinese economy. In a word, it will help China embark on a road of economic development which is driven predominantly by the expansion of the domestic economy.

## IV. Econometric Testing

We have theoretically revealed the relationship between urbanizing migrant workers and increasing domestic demand. We now carry out an empirical measurement of the effect of urbanizing migrant workers using survey data on actual income and consumption

expenditure (on daily consumer items, basic necessities and durable consumer items) of a synchronous sample of urban residents and migrant workers. In the three-sector model, we assume that migrant workers, because their urbanization is only partial, have a lower marginal propensity to consume (MPC), or income elasticity of demand for industrial goods, than urban residents, which thereby puts bounds to their consumption and the expansion of domestic demand. If this assumption accords with reality, then it can be inferred that promoting the urbanization of migrant workers will have effects that approximate to the results inferred in the dual sector model discussed in the second section.

Here we estimate the Engel curve with a view to measuring the gap between the income elasticity of commodity demand for urban residents and migrant workers. The Engel curve postulates the relationship between income and commodity demand in two-dimensional space when the price is invariable. As defined, the slope at each point of the curve stands for the MPC for that commodity, i.e. the ratio of change in consumption to change in income.

Now let's examine three consumption demand functions as follows:<sup>10</sup>

$$q = a_1 + cy \quad (32)$$

$$\ln q = a_2 + e \ln y \quad (33)$$

$$q = a_3 + b \ln y \quad (34)$$

where  $q$  is the quantity of the commodity consumed;  $y$  is the income of urban residents (or migrant workers); and  $a_i$ ,  $b$  and  $e$  are parameter estimations, where  $i=1, 2, 3$ .  $c$  in Equation (32) stands for MPC,  $e$  in Equation (33) stands for income elasticity of demand, and Equation (34) is the semi-log consumption demand function, which allows  $e$  to vary with the change of income. Thus the income elasticity is:

$$e = \frac{b}{q} = \frac{b}{a_3 + b \ln y} \quad (35)$$

This paper makes use of the survey data in 2005 collected by the Labor Market Research Program of the Chinese Academy of Social Sciences. The data sample includes 2,501 urban households, 7,446 individual urban residents, 2,513 migrant households and 5,619 individual migrant workers.

Given the indivisibility of household consumption, we use the household as the sample unit when measuring MPC. Parameter estimations in Equations (32)-(34) are listed in Table 1 (see Appendixes 1-6 for detailed results of estimation).

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10 Huang Yiping and Song Ligang, *Applied Quantitative Economics*.

Table 1 MPC and income elasticity of urban residents and migrant workers: estimation and comparison

	MPC (c)	Elasticity (e)	b	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>
Urban residents	0.405	0.574624	9695	9627	4.966	-75324
Migrant workers	0.306	0.232545	3336	8598	7.06	-17694

Source: Authors' own estimations and calculations.

In terms of MPC, migrant workers' consumption aspirations are clearly constrained compared with those of permanent urban residents. If migrant workers can be gradually urbanized to the extent that their MPC reaches the level of that of permanent urban residents, their consumption potential will be released by degrees. In terms of income elasticity of consumption demand, migrant workers have a much lower ratio (less than half that of urban residents), clearly showing that their purchasing power is constrained and they are reluctant to use their hard-earned money for consumption and purchasing.

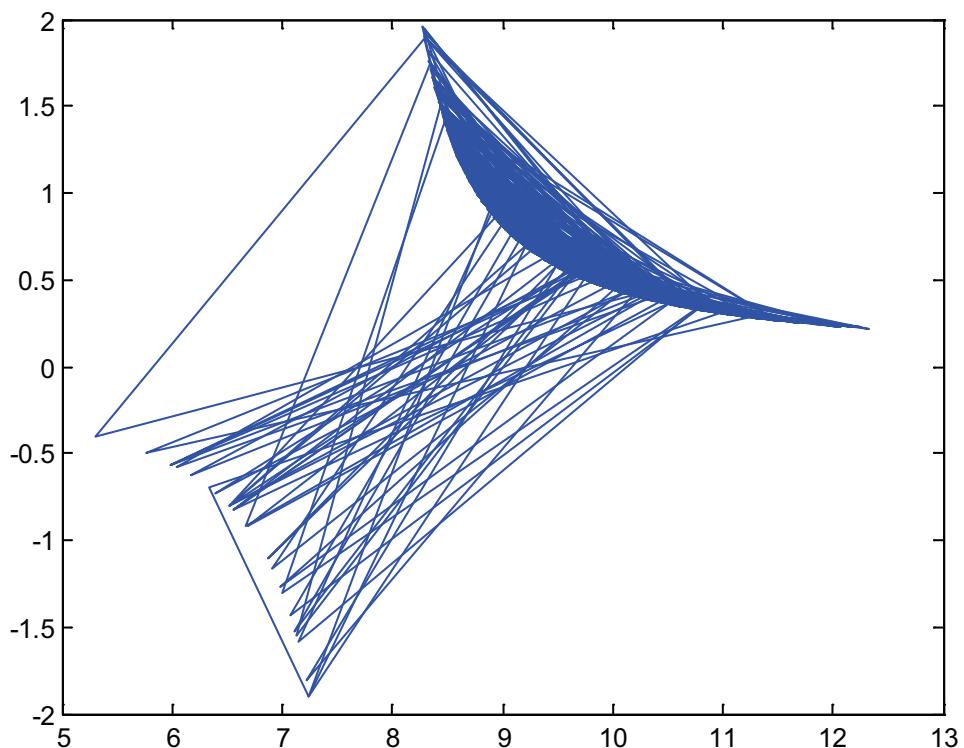
The semi-log consumption demand function allows for analysis of the impact of changes in income on elasticity of demand. According to this function, Equation (35) and other estimated parameters, we have functional relationships representing how  $e$  (income elasticity of urban residents or migrant workers) varies with changes in income.

$$e_{\text{urban residents}} = \frac{b}{q} = \frac{b}{a_3 + b \ln y} = \frac{9695}{-75324 + 9695 \ln y} \quad (36)$$

$$e_{\text{migrant workers}} = \frac{b}{q} = \frac{b}{a_3 + b \ln y} = \frac{3336}{-17694 + 3336 \ln y} \quad (37)$$

Putting equation (36) and income data into Matlab7.8 gives us the relationship between change in income  $y$  and change in  $e_{\text{urban residents}}$  (elasticity of demand) on the part of urban residents: see Figure 1 (the horizontal axis stands for  $\ln y$ , income in logarithm form; the vertical axis stands for  $e_{\text{urban residents}}$ , income elasticity of demand).

Figure 1 Relationship between change in income  $y$  ( $\ln y$ ) and change in demand elasticity ( $e_{\text{urban residents}}$ ) of urban residents



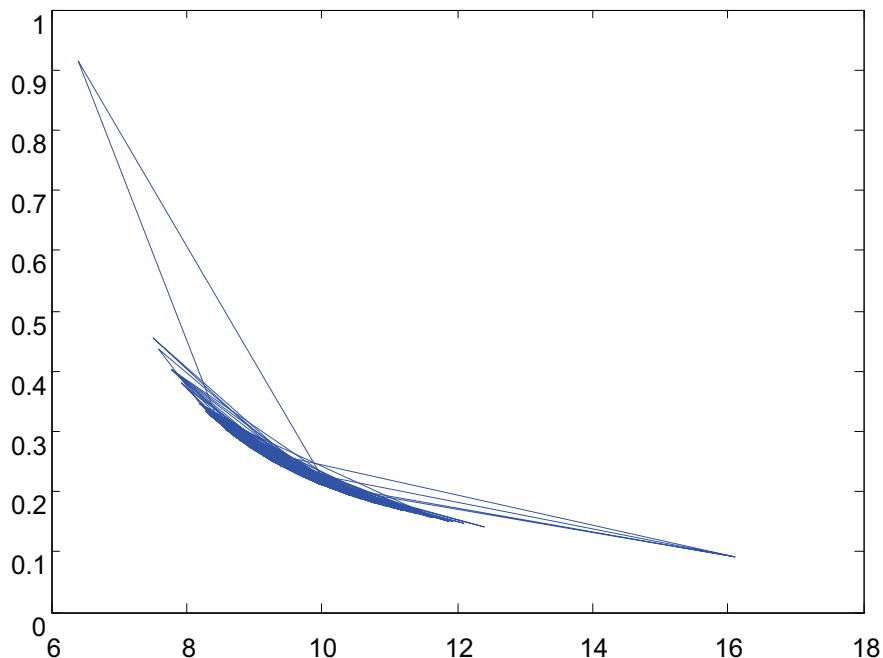
Note: This figure was calculated using Matlab7.8.

Source: Authors' own calculation.

Figure 1 shows that values of urban residents' demand elasticity are densely concentrated in the range 0.5-1, suggesting a variety of consumption levels and categories consumed by urban residents.

In comparison, putting Equation (37) and income data for migrant workers into Matlab7.8, we get the relationship between change in income  $y$  and change in  $e_{\text{migrant workers}}$  (elasticity of demand) for migrant workers; see Figure 2 (in which the horizontal axis stands for  $\ln y$ , income in logarithm form; the vertical axis stands for  $e_{\text{migrant workers}}$ , income elasticity of demand).

Figure 2 Relationship between change in income  $y$  ( $\ln y$ ) and change in demand elasticity ( $e_{\text{migrant workers}}$ ) of migrant workers



Note: This figure is calculated using Matlab7.8.

Source: Authors' own calculation.

Figure 2 shows that values of migrant workers' demand elasticity mostly range from 0.2 to 0.3. This very low elasticity implies that migrant workers are lacking in motivation to consume; their demand will remain at a low level regardless of the possibility or extent of an increase in their income.

We further estimate the proportion of income spent on food for the two groups (with Engel's law in mind). The Engel's coefficient of urban residents is approximately 41.86 percent; that of migrant workers is 44.10 percent. The two groups exhibit little difference in terms of Engels' coefficient, in line with the assumptions of the model. They diverge when it comes to consumption items that are not basic necessities. Owing to institutional barriers, migrant workers currently encounter enormous difficulties in becoming integrated into the city. They choose to save their money rather than consume as a response to these institutional barriers and the associated uncertainties.

## V. Conclusions and Policy Implications

We have revealed the relationship between making migrant workers into fully urbanized citizens and expanding domestic demand with a simple model and carried out econometric testing of the assumptions in that model. We argue that addressing the problem of falling external demand provides only a temporary reason for China to boost domestic demand to

develop its economy. The fundamental reason for turning to domestic demand is to change the country's unbalanced industrial structure and external-internal economic arrangements and to take full advantage of the domestic market to achieve the goal of industrialization. Econometric testing demonstrates that migrant workers, owing to barriers hindering their full urbanization, have far fewer consumption desires than urban residents. If urbanization is accelerated through the adoption of realistic measures, migrant workers' full latent consumption demand will be released. This will not only counterbalance the negative impact of falling external demand on economic growth, but also help China throw off the "dual imbalances" in its economy and raise its level of industrialization and urbanization.

First, to expand domestic demand, China should facilitate the urbanization of migrant workers so as to promote the process of industrialization and urbanization. Specifically, this requires removing the institutional barriers between urban and rural areas. Policies giving equal treatment to rural and urban residents should be implemented in rural and urban areas on the *hukou* system, employment, unemployment benefits, medical insurance, children's education, etc. If farmers are free to seek employment and settle down in the cities and gain full status as "citizens," or permanent urban residents, this will speed up the process of urbanization in China and fully release latent consumption demand. This newly emerging consumption will substitute for part of the external demand and thereby free China from an economic growth model that is excessively dependent on external demand. Moreover, the urbanization of migrant workers will also provide direct impetus for the development of the Chinese economy, as has been proved by the great changes in the cities resulting from migrant workers' immigration in the reform period.

Second, the government ought to invest more resources in public services and encourage their allocation on an equal basis. Now that farmers' freedom of movement is no longer an issue, the problem is how to give migrant workers full status as urban citizens. The fundamental reason for this difficulty lies in the social welfare system associated with the *hukou* system of residential registration. The urbanization of migrant workers means increased financial expenditure for their destination. The local government may be unable to provide more services, or there may be a problem about who provides them. If, for example, a provincial government funds basic public services for all residents under its jurisdiction, then farmers' intra-provincial migration will not impose extra financial burdens on the places they go to, thus greatly reducing the barriers to their urbanization. Therefore, the gradual establishment of a basic system of public services at the national level will serve as an important guarantee for speeding up the urbanization of migrant workers.

Third, increasing financial investment in rural public services and giving subsidies to farmers will not only raise their purchasing power but also boost the development of industrialization and urbanization. All kinds of direct or indirect subsidies for farmers (such as the "household appliances for the countryside" policy, agricultural tax exemptions and increased investment in rural social welfare) will have a positive effect on expanding the

second kind of domestic demand. However, these results are directly determined by the scale of government fiscal subsidies and are therefore largely subject to government's fiscal capability.

Fourth, the service industry should be opened up to facilitate the transformation of Chinese economy. China has a large "surplus" of production capacity in the manufacturing sector, but at the same time has the characteristics of a "shortage economy" in the service sector. This shortage economy exists mainly because many important service sectors are state monopolies. The primary means for developing the service sector is to do away with monopolies and open up to private capital. A fully developed service industry will greatly broaden employment channels for migrant workers as well as unlocking the consumption capacity of urban residents, thus rectifying both the domestic structural imbalance and the external-internal imbalance in the Chinese economy.

### **Notes on Contributors**

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## Appendices

Table 1 Regression equation of urban residents' income and consumption expenditure

$$q = a_1 + cy$$

Dependent Variable: Q-0.065360*Q(-1)				
Method: Least Squares				
Sample (adjusted): 2 2465				
Included observations: 2464 after adjustment				
Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	9,002.357	470.8587	19.11902	0.0000
Y-0.065360*Y(-1)	0.405126	0.014251	28.42826	0.0000
R-squared	0.247133	Mean dependent variable		18,820.28
Adjusted R-squared	0.246827	S.D. dependent variable		18,306.24
S.E. of regression	15,887.17	Akaike info criterion		22.18522
Sum squared residual	6.21E+11	Schwarz criterion		22.18994
Log likelihood	-27,330.19	F-statistic		808.1657
Durbin-Watson stat	2.013647	Prob(F-statistic)		0.000000

Table 2 The semi-logarithmic equation of urban residents' income and consumption expenditure  $q = a_3 + b \ln y$ 

Dependent Variable: Q				
Method: Least Squares				
Sample (adjusted): 1 2465				
Included observations: 2389 after adjustment				
Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	-75,324.59	3,967.041	-18.98760	0.0000
LNY	9695.864	399.7593	24.25425	0.0000
R-squared	0.197720	Mean dependent variable		20,540.20
Adjusted R-squared	0.197383	S.D. dependent variable		18,517.69
S.E. of regression	16,589.79	Akaike info criterion		22.27180
Sum squared residual	6.57E+11	Schwarz criterion		22.27664
Log likelihood	-26,601.66	F-statistic		588.2689
Durbin-Watson stat	1.911867	Prob(F-statistic)		0.000000

Table 3 The log-log regression equation of urban residents' income and consumption expenditure  $\ln q = a_2 + e \ln y$

Dependent Variable: LNQ-0.105352*LNQ(-1)				
Method: Least Squares				
Sample (adjusted): 22,465				
Included observations: 2,318 after adjustment				
Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	4.477446	0.117477	38.11325	0.0000
LNQ-0.105352*LNQ(-1)	0.574624	0.013216	35.91373	0.0000
R-squared	0.357701	Mean dependent variable		8.677935
Adjusted R-squared	0.357423	S.D. dependent variable		0.661171
S.E. of regression	0.530000	Akaike info criterion		1.568984
Sum squared residual	650.5649	Schwarz criterion		1.573944
Log likelihood	-1,816.452	F-statistic		1,289.796
Durbin-Watson stat	2.031596	Prob(F-statistic)		0.000000

Table 4 Regression equation of migrant workers' income and consumption expenditure  $q = a_1 + cy$

Dependent Variable: Q-0.188743*Q(-1)				
Method: Least Squares				
Sample (adjusted): 22,502				
Included observations: 2,502 after adjustment				
Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	6,982.139	1,441.960	4.842118	0.0000
Y-0.188743*Y(-1)	0.306983	0.040341	9.840776	0.0000
R-squared	0.299590	Mean dependent variable		16,800.48
Adjusted R-squared	0.294431	S.D. dependent variable		14,568.07
S.E. of regression	10,358.40	Akaike info criterion		21.34898
Sum squared residual	1.04E+10	Schwarz criterion		21.40140
Log likelihood	-1,054.774	F-statistic		96.84088
Durbin-Watson stat	1.986094	Prob(F-statistic)		0.000000

Table 5 The semi-logarithmic regression equation of migrant workers' income and consumption expenditure  $q = a_3 + b \ln y$

Dependent Variable: Q-0.132644*Q(-1)				
Method: Least Squares				
Sample (adjusted): 22,502				
Included observations: 2,292 after adjustment				
Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	-15,359.32	2,600.291	-5.906771	0.0000
LNY-0.132644*LNY(-1)	3,336.612	300.9114	11.08835	0.0000
R-squared	0.250955	Mean dependent variable		13,203.14
Adjusted R-squared	0.250540	S.D. dependent variable		17,458.76
S.E. of regression	17,011.85	Akaike info criterion		22.32208
Sum squared residual	6.63E+11	Schwarz criterion		22.32709
Log likelihood	-25,579.10	F-statistic		122.9516
Durbin-Watson stat	2.009911	Prob(F-statistic)		0.000000

Table 6 The log-log regression equation of migrant workers' income and consumption expenditure  $\ln q = a_2 + e \ln y$

Dependent Variable: LNQ-0.250974*LNQ(-1)				
Method: Least Squares				
Sample (adjusted): 2 2502				
Included observations: 2239 after adjustment				
Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	5.303085	0.096587	54.90488	0.0000
LNY-0.250974*LNY(-1)	0.232545	0.012911	18.01193	0.0000
R-squared	0.316660	Mean dependent variable		7.021788
Adjusted R-squared	0.316269	S.D. dependent variable		0.757599
S.E. of regression	0.708155	Akaike info criterion		2.148586
Sum squared residual	1,121.819	Schwarz criterion		2.153690
Log likelihood	-2,403.342	F-statistic		324.4295
Durbin-Watson stat	2.082355	Prob (F-statistic)		0.000000

—Translated by Li Cunna  
Revised by Sally Borthwick