Hukou and consumption heterogeneity:

Migrants' expenditure is depressed by institutional constraints in urban China

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Abstract

This paper provides a new explanation for China's extremely low consumption-to-GDP ratio, highlighting the constraints of the "household registration system" (*Hukou*) on China's household consumption. Our baseline results show that the consumption of migrants without an urban *Hukou* is 30.7% lower than that of urban residents. Moreover, consumption heterogeneity cannot be explained by migration effects, culture, social norms, habits or some other forms of household heterogeneity. Further studies on the composition of household consumption have shown that the gaps are largest in areas such as education and culture, durable goods and health. As both the number and income level of migrants are rising, the constraining effects of *Hukou* on household consumption will continue to increase.

Keywords: Consumption; heterogeneity; *Hukou* system; migrants; urban residents

JEL code: R23, E21

I. Introduction

China's low consumption-to-GDP ratio, corresponding to a high savings ratio, is regarded as an underlying cause of the U.S. housing price bubble and the global financial crisis (Greenspan, 2009). In recent years, this issue has attracted attention across the world (e.g., Modigliani and Cao, 2004; Chamon and Prasad, 2010; Wei and Zhang, 2011). It is worth noting that China's consumption-to-GDP ratio is not only lower than that of developed countries, but that it is also lower than economies at a similar stage of development, like Brazil and India, and those with a similar culture, like Japan and Korea (see Section 2 for details). Therefore, there must be some specific factors constraining Chinese household consumption.

This paper provides a new explanation for China's low household consumption. Compared with the existing literature, we highlight the importance of one particular institution in transitional China, the "household registration system" (*Hukou*). This system is a state institution that retains tight control over labor mobility across regions, and especially migration from rural to urban areas. It also restricts access to state-sponsored benefits for the majority of China's rural population, ranging from small benefits like being able to buy a city bus pass to much more important matters such as urban services and public welfare, including enrolling children in public schools (Chan and Buckingh, 2008). An individual's *Hukou* status is inherited at birth and can be treated as almost exogenous (Afridi, Li, and Ren, 2009). As *Hukou* determines many important aspects of life, if not the fate of China's people, the *Hukou* book which records the location and attributes of households has been dubbed "China's No. 1 document" (Chan,

2009).

Hukou creates two different societies (Naughton, 2007). Within each city, there are two segmented groups of people, shaped by the system: urban residents who have local *Hukou*,[1] and migrants who do not. Without a local *Hukou*, migrants are discriminated against within the labor market (Zhu, 2004; Wang et al., 2009; Friedman and Lee, 2010); they are excluded from many urban jobs (Chan and Buckingh, 2008) and face many formal and informal obstacles to securing jobs (Li, 2003). Moreover, they also have limited access to social insurance and other forms of welfare (Zhu, 2003). Such heterogeneity has a significant impact on their consumption behavior. Our study finds that migrants' level of consumption was lower than that of urban residents by about 30.7%. We find evidence suggesting that migrants save more for precautionary purposes due to higher income risks and the lack of social security coverage. Further studies on the composition of household consumption have shown that the gaps in consumption are largest in the areas of education and culture, durable goods and health. With careful analysis, we find this consumption heterogeneity to be explained mainly by the *Hukou* system, and not by other factors such as migration effects, life cycle characteristics, culture or habits.

The implications of our study are twofold: first, China's cross-region migrants (who are mainly rural to urban migrants), who now amount to around 221 million people[2]

[1] Please refer to the section entitled "The *Hukou* Dual Classification" in Chan and Buckingham (2008) for a detailed introduction to local *Hukou.*

[2] Data source: State Statistical Bureau of China: The First Report on the Main Statistics of the Sixth Population Census, http://www.stats.gov.cn/tjfx/jdfx/t20110428_402722253.htm

(almost one-sixth of China's total population) have depressed consumption levels, and if the *Hukou* constraint was loosened or removed, aggregate household consumption in China would receive a significant boost. Our estimation is that, the removal of *Hukou* system would lead to a rise in aggregate consumption of 222 billion yuan, which is equivalent to 4.2% of household consumption and 1.8% of GDP. Second, since the *Hukou* system mainly constrains the consumption of non-necessities, its negative effects on domestic demand will increase as people become richer and the number of migrants increases. In the post-crisis era, boosting China's household consumption is critical for the economic rebalancing of both China and the world as a whole. This study shows, to this end, there is an urgent need to reform the *Hukou* system.

The structure of this paper is as follows: Section 2 presents some facts and existing explanations of China's savings ratio from the literature, and especially studies concerning the household savings ratio; Section 3 introduces the econometric model and the data; and Section 4 presents baseline empirical results and provides evidence that migrants face higher income risks that may induce a stronger precautionary savings motivation. Section 5 contains robustness checks that rule out other possible channels that may confound the effects of *Hukou* on migrants' consumption; Section 6 discusses how the effects of *Hukou* on consumption have changed over time; and Section 7 concludes.

II. China's consumption and savings: Facts and literature review

Ever since China began its "Reform and Opening" process, its economy has been

growing at an average annual rate of nearly 10%. However, economic imbalances, both external and internal, are becoming increasingly severe. In particular, China's low consumption level is widely believed to be the fundamental source of the imbalance that is threatening the sustainability of its long-term economic growth. Table I compares the consumption-to-GDP ratio of China with that of several other major economies.

[Table I about here]

First, in 2009, China's consumption-to-GDP ratio was much lower than that of both Western developed nations (such as the U.S., Britain and Germany) and Asian developed countries like Japan and Korea. Second, by comparing "final consumption" with "household final consumption", we can conclude that China's government consumption is not significantly lower than that of the others; instead, its low level of final consumption is driven mainly by household consumption. In fact, China's current household consumption ratio is even lower than the lowest household consumption ratios experienced by Japan and Korea in recent history.[3] Third, if we compare China with countries at a similar stage of development, such as India and Brazil, China's household consumption ratio is still lower by a large margin. Considering China's low level of expenditure in public areas such as education, health and pensions, the relative level of China's household consumption ratio in comparison with those of other countries is even lower (Aziz and Cui, 2007). After controlling for the level of economic development, the

[3] As shown by World Development Indicators, the lowest point of Japan's household consumption ratio was 48.4% in 1970, and for Korea, it was 49.3% in 1998. Both are much higher than China's 2008 household consumption ratio of 35%.

economic growth rate, demographic features, the government's fiscal policy, the development of a financial structure, urbanization, etc., China's household consumption ratio is still lower than the expected level by more than 10% (Kraay, 2000; Kuijs, 2005).

China's household consumption ratio is not only lower than that of other major countries in the world; it has also been declining in recent years. Figure I presents China's consumption-to-GDP ratio, household consumption ratio and household savings ratio during the period 1992-2008. It shows that, since 2000, China's consumption ratio and household consumption ratio have been continually declining. The consumption ratio declined from 62.3% in 2000 to 48.4% in 2008, and the household consumption ratio fell from 46.4% to 35.1%. Correspondingly, the household savings ratio increased by a large margin during the same period, from 27.5% in 2000 to 39.4% in 2008. If we use a time trend line to fit the household savings ratio after 1992, the slope is 0.61. This means that, on average, the savings ratio increased by 0.61 percentage points each year. If we only consider the savings ratio after 2000, the annual increase in the savings ratio is 1.48 percentage points. We can also learn from Figure I that the government consumption ratio (government consumption/GDP, the gap between the overall consumption ratio and the household consumption ratio) was almost a constant after 1992. This indicates that China's declining consumption ratio is driven mainly by the decline in China's household consumption.

[Figure I about here]

With regard to China's household consumption and savings, there are many explanations which have been put forward in the existing literature. The first is based on

life cycle theory. The life cycles (Ando and Modigliani, 1963) are widely found to be an important determinant of household consumption behavior. Modigliani and Cao (2004) argue that the rising share of labor force in China's population that has driven up the savings ratio. However, Chamon and Prasad (2010) find this explanation to be inconsistent with the profile of consumption and savings at the household level in China, as older people have been found to save more than middle-aged people. They also found that savings ratios increased across all demographic groups during 1995-2005. Furthermore, Kraay (2000) found that this theory cannot explain the declining consumption ratio in aggregate-level data. The second explanation is based on liquidity constraints (e.g., Kujis, 2005; Aziz and Cui, 2007). These researchers argue that the underdevelopment of China's financial market has forced households and companies to save more, and has led to a lower consumption ratio. Nevertheless, the efficiency of China's financial markets is improving as time goes by, while the household consumption ratio is still declining. This suggests that the level of financial market development is, at most, a minor factor as regards China's household consumption. The third explanation is based on precautionary savings theory (e.g., Meng, 2003; Blanchard and Giavazzi, 2005; Giles and Yoo, 2007; Chamon and Prasad, 2010), which argues that China's pension, healthcare, education and housing system reforms have increased the uncertainty of household income and expenditure, and increased household saving correspondingly. Our view is that precautionary saving is an important perspective for explaining China's low level of household consumption; however, recent social safety net reforms and the increasingly wide coverage of pensions and healthcare has not led to a

significant rise in China's household consumption. This calls for further exploration of how the precautionary saving mechanism works with China's institutional background as well as on the effective policies targeting it. Finally, Wei and Zhang (2011) put forward an interesting explanation for China's rising household savings ratio. They argue that, as China experiences a rising sex ratio imbalance, the increased competition in the marriage market has induced Chinese people, especially parents with a son, to postpone consumption in favor of wealth accumulation in order to increase the competitiveness of their son.

In contrast to the existing explanations, we connect consumers' heterogeneity with one of transitional China's institutional features, the *Hukou* system. Consumption heterogeneity has not been studied in depth in the empirical literature, but we think it is essential in order to understand the features of China's aggregate consumption and to generate effective policies. With regard to the *Hukou* system, it is now common for studies of China to consider it as the main variable which defines exogenous constraints on fundamental individual behavior in social and economic studies (e.g., Chan and Buckingham, 2008; Afridi, Li, and Ren, 2009). For example, Whalley and Zhang (2007) point out that *Hukou* prevents better allocation of the economic resources in China and hinders Chinese development. Liu (2005) and Whyte (2006) argue that the *Hukou* system is a major contributing factor to rural-urban inequality.

During the process of rapid urbanization, an increasing number of rural laborers seek jobs in cities, but most of them cannot get an urban *Hukou*. According to the sixth population census in 2010, the total number of migrants in China was 221 million, which

amounts to one-sixth of China's total population. Without a *Hukou*, their consumption is expected to be lower than that of urban residents for three reasons: (1) migrants are not covered to the same extent by the social safety net and their jobs are less secure, meaning that they have a stronger precautionary saving motivation; (2) migrant workers are discriminated against in the labor market (Zhu, 2004; Wang et al., 2009; Friedman and Lee, 2010), and so their experience may not be fully compensated, which could affect their expectations of a long-term permanent income; and (3) migrants have greater mobility, and therefore consume fewer durable goods. In reality, in China, only *Hukou* migration is officially regarded as migration. Anything else is commonly called "population movement" or "floating population", implying a low degree of expected permanence (Chan and Buckingham, 2008). In the following, we quantitatively compare the consumption of migrants with that of urban residents.

III. Data and model specification

The data used in this study come from the Chinese Household Income Project Survey (CHIPS, 2002). This survey was conducted by the income distribution research group of the Chinese Academy of Social Sciences. It covered 22 provinces, 6835 urban households and 2000 migrant households, encompassing 20,632 urban residents and 5327 migrants. After removing observations for which major variables, such as household consumption, age, region, etc., are missing, we obtained 6784 observations for urban households and 1966 for migrant households.

Our central empirical question is: if the major variables which affect the

consumption of urban residents and migrants are properly controlled, do migrants have lower consumption levels than urban residents? In order to test this hypothesis, we employed a standard econometric specification similar to that of Charles et al. (2009):

$$\ln C = \alpha + \beta * migrant + \gamma * \ln Y + \eta X + \varepsilon \qquad (1)$$

where ln$C$ is the natural logarithm of per capita consumption.[4] In this survey, consumption includes eight sub-categories: food; clothing; household equipment; medicine and health; communication; education and culture; housing; and other. However, housing expenditure (mainly rent) is neither reported nor estimated for households who own a house,[5] and the definition of "other expenditure" is different for urban residents and migrants. In order to reduce the measurement error, we defined consumption as the sum of expenditure on six sub-categories, excluding housing and other. *Migrant* is a dummy variable, taking a value of 1 for migrants (without *Hukou*) and 0 for urban residents (with *Hukou*). β is the coefficient of greatest interest for the purpose of this study. A significantly negative β means that migrants' consumption is lower than that of urban residents.

ln$Y$ is the natural logarithm of per capita income, which is a major control variable in household consumption regressions. X denotes other controlling variables, and ε is the

[4] We use consumption rather than saving rate as our dependent variable in order to facilitate the analysis of the mechanism through which *Hukou* affects household consumption. We will employ saving ratio as a dependent variable in a test in the robustness checks section.

[5] In China, the housing expenditure of urban residents should be much higher than that of migrants, as the living conditions of urban residents are much better.

error term. Based on the existing literature on the consumption function (e.g., Deaton, 1992; Carroll, 1994; Attanasio and Weber, 1995), we controlled some other variables. They included the characteristics of the head of the household, such as years of education, health status, occupation and ownership and industry of his/her company. We also controlled for per capita wealth. Furthermore, we included a set of provincial dummy variables in order to capture the location fixed effects.

[Table II about here]

Table II presents the statistical summary as regards the major variables for migrants and urban residents. It shows that, on average, urban residents have a higher level of income, total wealth and consumption, whereas migrant households have a smaller family size in urban areas.[6] The average per capita consumption of urban residents was about 1.5 times that of migrants. The heads of migrant households are younger and have a lower level of education. Based on these comparisons, in our cross-section estimation of consumption, we need to carefully check whether the observed consumption-*Hukou* relationship originates from other differences between urban residents and migrants.

IV. Empirical results

4.1 Baseline regression results

This section examines whether or not there are significant differences between the

[6] Some members of migrant households do still live in rural areas. The average family size of the migrant households was larger than that of the urban households when family members who still lived in rural areas were included.

consumption behavior of migrants and urban residents. First, column 1 of Table III reports the baseline results. It shows that migrants' consumption is 30.7% lower than that of urban households when other major household characteristics are controlled.

[Table III about here]

This result indicates that if migrants have the same consumption behavior as urban residents, the aggregate household consumption ratio can be raised by a large margin. Using the baseline estimation of the difference in consumption (0.307), we can evaluate the aggregate impact of *Hukou* on the household consumption ratio. In our sample, the migrants' average per capita consumption was 4279 yuan. If the *Hukou* system was removed and migrants were treated like urban residents, their per capita consumption would rise by 30.7%, that is, 1314 yuan. According to Sheng (2008), in 2002, migrant labor accounted for around 21% of the total rural labor force, which amounted to 782 million people, meaning that the total number of migrants in 2002 was around 169 million. If the *Hukou* system was removed, aggregate consumption would rise by 222 billion yuan (169 million*1314) [7], which amounts to 4.2% of household consumption and 1.8% of GDP. Noticeably, this consumption "loss" will continue for as long as *Hokou* is in effect.

In columns 2 to 5, we tried some other dependent variables in order to check the robustness of our major result. First, migrants may send part of their income back to rural areas. The remittance, which is saved for the migrant's family in the urban area, is at

[7] As a comparison, China's net export in 2002 was 309.4 billion.

least partly consumed by their family in the rural area. For this reason, in column 2, we assume that the rural family has the same consumption-to-income ratio as their family members in urban areas. Therefore, we multiplied the remittance by the consumption ratio, and then added this adjusted remittance to the consumption of migrant households in urban areas.[8] After this adjustment, the gap in consumption was reduced but still significant at 24.5%. In column 3, we made the even stronger assumption that all remittances are used as consumption. Therefore, we added remittances to household consumption. With this adjustment, the consumption ratio of migrants was still significantly lower than that of urban residents by 17.7%. As at least a portion of the remittance will become savings, the estimates in column 3 can be regarded as the lower bound of the *Hukou* effects.

In column 4, we use per capita consumption as a dependent variable instead of ln (per capita consumption). It shows that migrants' per capita consumption is 1274 yuan less than that of urban residents. Column 5 uses the savings ratio as the dependent variable. Similarly to Chamon and Prasad (2010), we define the savings ratio as 1 - (household consumption/household income). The estimated savings ratio of migrants is 13% higher than that of urban residents. In summary, we find the consumption heterogeneity between urban residents and migrants to be robust to changes in the

[8] The method of adjusting the migrants' consumption is given by the following formula: household consumption_adjusted = household consumption + remittance*(household consumption/(household income-remittance)). The assumption of this adjustment is that the consumption ratio over remittances is the same as the consumption ratio over other income.

dependent variables.

4.2 *Hukou*-consumption relationship: channel analysis

In the latter part of Section 2, we propose several channels from *Hukou* constraints to lower levels of consumption, mainly through migrants' stronger motivation to save as a precaution. However, these hypotheses cannot be fully tested. This is partly due to the limits of the dataset and partly due to the lack of a standard approach with which to precisely measure precautionary saving. Nevertheless, in the section below, we provide some indirect evidence for these hypotheses.

First, when restricted by the *Hukou* system, migrants are less likely to be covered by insurance programs. In our sample, only 85 heads of household out of 1968 are covered by a pension system. In addition, only 52 are covered by a medical insurance program, and only 21 are covered by an unemployment insurance program. In contrast, for the urban residents, 4614 heads of household from among 6784 are covered by a medical insurance program. The medical insurance program coverage ratio of the urban residents (68%) is much higher than that of the migrants (2.6%).[9]

[Table IV about here]

Second, Chamon and Prasad (2010) argue that the rising labor income risk is very important for understanding the increasing saving rate in China. The survey contains information on whether or not a person has previously changed his/her job. In our sample,

[9] The coverage ratio for pension systems and unemployment insurance programs was not available in the urban survey.

38.8% of migrants have changed jobs, while only 5.2% of urban residents have such an experience. A recent survey in three Chinese cities, Beijing, WuXi and Zhuhai, shows that the institutional discrimination which is inherent in the *Hukou* system reduces the number of jobs available to migrants and increases their job search costs and the cost of losing jobs. Actually, migrants often take jobs which are unacceptable to local residents, but even in these cases, the effects of institutional discrimination still increase costs of migrants to lose or change jobs (Zhang, 2010). These facts imply that migrants have a much higher labor income risk than urban residents. Table IV further presents the difference in contract structure between urban residents and migrants, showing that 77.52% of urban residents have long-term or fixed contracts with their employers, whereas only 5.24% of migrants have similar kinds of contracts, which also implies a higher labor income risk for migrants. [10] Table IV also presents the wage structure of migrants and urban residents. It shows that, on average, more than 70% of the income of urban residents comes from a wage or salary, which is usually more stable than other sources of income. For the migrants, however, only 43% of income is obtained in this form.

With regard to insurance and labor contracts, Friedman and Lee (2010) documented some official estimates, which we cite here as further evidence:

> According to a 40-city survey conducted by the Labour [sic] and Social Security Ministry in 2004, among the 120 million strong migrant labour [sic] force from the countryside, a paltry 12.5 per cent has signed a labour [sic] contract, while only 15

[10] Li (2010) documents that in 2004, 79% of migrant workers had not signed a labor contract.

per cent participate in social security scheme, and 10 per cent has medical insurance (State Council Research Office Team 2006: 13). [Friedman and Lee, 2010, page 510][11]

In conclusion, the summary statistics outlined above indicate that migrants face high levels of labor income uncertainty, which induces them to save more and consume less due to the motivation of precautionary saving.

V. Robustness checks

The baseline model shows that migrants' consumption is much lower than that of urban residents when other important factors as regards consumption are properly controlled. We need to be very cautious before we conclude that consumption heterogeneity is due to the institutional constraints of the *Hukou* system, rather than other unobservable differences between urban residents and migrants that may affect consumption. In this section, we conduct tests to rule out these possibilities.

5.1 Consumption heterogeneity across different regions

It may be argued that the difference between migrants and urban residents is due to

[11] Following these words, Friedman and Lee (2010) also document the serious wage arrears problem for migrants, which would also increase the precautionary saving motivation of migrants. "Less than half (48 per cent) of the migrant workforce get paid regularly, while 52 per cent reported regular or occasional wage non-payment (State Council Research Office Team 2006: 116). Sixty-eight per cent of migrant workers work without any weekly day of rest, 54 per cent of migrant workers have never been paid overtime wages as required by law and 76 per cent do not receive the legal holiday overtime wages." [Friedman and Lee, 2010, page 510]

migration effects, rather than *Hukou* restrictions. In other words, migrants may consume less simply because they have just migrated to cities, and would not consume more even if they were given urban *Hukou*. For this reason, we examined the effect of *Hukou* on consumption heterogeneity across different regions with varying levels of *Hukou* restrictions. If our results are driven mainly by migration effects, consumption heterogeneities between urban residents and migrants should be fairly consistent across different regions. Otherwise, if *Hukou* constraints constitute the dominant effect, consumption heterogeneity should be greater in areas with stronger *Hukou* restrictions. Accordingly, we divided our sample into five groups: Beijing (the capital of China); capital cities of coastal provinces; capital cities of non-coastal provinces; non-capital cities of coastal provinces; and non-capital cities of non-coastal provinces. In China, it is more difficult for migrant workers to achieve urban *Hukou* in bigger or higher-level cities,[12] especially in coastal areas.[13] Table V presents the results of these sub-samples.

[Table V about here]

Column 1 presents the results for Beijing, where *Hukou* is restricted most rigorously. The consumption gap between migrants and urban residents is 71.7%, which is much higher

[12] For details, please refer to Appendix 1: "Principles of China's Control of Internal Migration" by Wang (2004). We quote here two paragraphs specifying "strict control" and "appropriate control" respectively: "*Hukou* relocation from the rural to urban areas; or from other cities to Beijing, Shanghai and Tianjin metropolises must be controlled *as restrictively as possible*" ;"*Hukou* relocation from township to city; from small city to large city; from ordinary village to outskirts of city/township, … should be controlled *appropriately*."[Wang, 2004, page 130]

[13] According to the estimations of Li (2010), the Eastern region received over 70% of all rural migration workers in 2008.

than the baseline estimate. Columns 2 to 5 present the results for other regions: for the capital cites of coastal provinces, the gap is 46.8%; for capital cities of non-coastal provinces, it is 36.5%; for non-capital cities of coastal provinces, it is 28.4%; and for non-capital cities of non-coastal provinces, it is 23.1%. These results are consistent with our hypothesis that *Hukou* restriction, rather than migration, is the dominant reason for our major finding.

5.2 Household heterogeneity or *Hukou* constraints?

It may also be argued that our baseline results are driven by some household-level differences between migrants and urban residents. Therefore, in this section, we check whether our results are robust by considering household heterogeneity.

First, the family sizes of urban residents and migrants are different. As shown in Table II, urban residents have larger families. In order to address this concern, column 1 of Table VI uses the sub-sample of families with three household members or fewer. The coefficient of the migrant dummy is highly significant at 32.3%. Second, the age structure of urban residents and migrants is also different. Migrants are younger; over 90% of the heads of migrant households are under 50 years old. As regards this issue, column 2 uses a sub-sample of families with heads of household who are 50 years old or younger. This shows that, in this subsample, the consumption ratio of migrants is 29.9% lower than that of urban residents.

[Table VI about here]

Columns 3 to 5 consider some other household characteristics which are emphasized in the literature. First, Chamon and Prasad (2010) studied the effects of house ownership

on household consumption and saving behavior. They argue that house ownership could be important for understanding the high saving rate in China. In order to take this into account, we conducted a test in column 3 using the sub-sample of households who do not own a house.[14] The consumption gap between urban households and migrants is 28.9%. Second, Yang and Chen (2009) and Chamon and Prasad (2010) highlight the importance of expected expenditure on children's education in determining household consumption. They found that expectations regarding future expenditure on education increase current saving. Column 4 therefore includes the number of children as an additional explanatory variable.[15] The results in column 4 show that the number of children has a positive effect on household consumption that includes expenditure on education. However, the addition of this measure does not affect the coefficient of the migrant dummy in our baseline model. Third, Wei and Zhang (2011) argue that the sex ratio is important for determining household saving. Column 5 addresses this possibility by including the number of boys as an additional explanatory variable. We find that the estimated consumption gap between migrants and urban households was no different from the previous estimations.

In summary, Table VI suggests that household heterogeneity does not account for the majority of consumption heterogeneity between migrants and urban households.

5.3 Institutional constraints or culture?

[14] As most of the migrants in our sample do not own a house, comparing the households who own a house is problematic.

[15] A child is defined as a person who is 18 years old or under.

Finally, the baseline consumption heterogeneity between urban households and migrants who were born in rural areas could be due to some unobservable factors, such as culture, social norms or habits, rather than *Hukou* identity. Existing studies have shown that culture and habits can affect household consumption and saving behavior (e.g., Carroll, et al., 1994, 1999). When comparing migrants with local residents, it is possible that migrants may have a lower consumption ratio simply because their preferences are different from those of urban households. In order to address this concern, Table VII checks the robustness of our baseline results by controlling for measures relating to culture and social norms.

[Table VII about here]

Culture and social norms are not directly observable. In the CHIPS questionnaire, urban households are asked whether they were born in an urban area or in a rural area but later obtained an urban *Hukou*. This information provides a good opportunity to separate the effects of culture and *Hukou*. If culture or social norms are important, we should expect that people born in rural areas (including migrants and urban households born in rural areas) would have similar consumption patterns.

Column 1 of Table VII compares the consumption of migrants with that of urban residents who were born in rural areas but later obtained an urban *Hukou*. In the dataset, there are 1775 urban residents who were born in rural areas. The results in column 1 show that they have much higher consumption levels than migrants, with a gap of 25.9%. This indicates that the majority of the gap in consumption is not explained by culture or habits.

Next, one may argue that people who were born in rural areas but finally achieved an urban *Hukou* are different in terms of certain unobservable characteristics from those who did not get a *Hukou*. For this reason, we needed to explore how people born in rural areas achieved their urban *Hukou*. In China, most rural people obtain an urban *Hukou* through achieving a degree in an institute of higher education, purchasing a house, working as a civil servant, joining the army or their land being expropriated by the government.[16] If well-educated people are more likely to get an urban *Hukou*, education could be an underlying force driving the difference in consumption behavior. For this reason, in column 2 of Table VII,[17] we used the sub-sample of urban residents with nine years of education or less, which means that they received no more than compulsory education. The results show that, for urban residents who were born in rural areas and did not receive a higher education, their level of consumption was still much higher than that of migrants, and the gap was 24.5%. In column 3 of Table VII, we used the sub-sample of people who obtained their *Hukou* through joining the army or because their land was expropriated by the government. These are more exogenous events, and the people involved are less likely to be systematically different from other migrants in terms of ability, talent or preference. The results in column 3 show that the level of consumption

[16] For a detailed introduction, please refer to the section by Chan and Bucfkingham (2008) about "The System of Approving Hukou Migration and the Nongzhuanfei Reforms."

[17] We used a threshold of nine years of education because China requires everyone to attend school for at least nine years, which implies that people with less than or equal to nine years of education are less likely to be systematically different in terms of their ability, talent or preference, regardless of whether or not they obtained urban *Hukou*.

of these people is 22.1% higher than that of migrants.

Finally, one may still worry that people who move from rural areas to urban areas will be affected by the urban culture or social norms, and that their consumption behavior will be similar to that of urban residents. In order to address this concern, we controlled for "the number of years since the household migrated to an urban area" in column 4 for migrants.[18] If such changes to habit are important for consumption, the coefficient should be significantly positive – migrants staying in urban areas for a longer period are more likely to be changed by the urban culture. However, we find the coefficient to be insignificant, which cast doubt on the explanation based on culture and habit.

In brief, these results confirm our basic hypothesis that people with an urban *Hukou* have higher levels of consumption than migrants, and that the major part of the gap cannot be explained by habit, preference, ability or other unobservable characteristics. This suggests that the restrictions inherent in the *Hukou* system are the key determinants of consumption heterogeneity.

VI. Shrinking effects of *Hukou* on consumption?

The data we used were the best we could find for estimating how the *Hukou* system has constrained migrants' consumption. The analyses above lend strong support to the theory of the restrictions that *Hukou* imposes on migrants' consumption. However, due to the

[18] We used the data for migrant households because the variable "number of years since the household migrated to an urban area" is not available in the urban household survey.

cross-sectional nature of the data, one may worry that, as time goes by, the effects of *Hukou* on migrants' consumption may become less and less important. In this section, we argue that there are at least three factors that strengthen the constraints of *Hukou* on consumption at the aggregate level.

First, the number of cross-region migrants, mainly from rural to urban areas, has risen continually in the past. This means that an increasing number of people are constrained by the *Hukou* system in terms of their consumption (see Table VIII for the time series data concerning the number of migrants). This number amounted to around 221 million in 2010.[19] In big coastal cities, the number of migrants grows faster than the national total. The proportion of migrants without local *Hukou* in the total population is as high as 39.0% in Shanghai and 35.9% in Beijing, as reported by the sixth population census in 2010. In Shanghai, the number of migrants without local *Hukou* increased from 3.46 million in 2000 to 8.98 million in 2010, with an annual growth rate of 9.99%.[20] As previously shown, in big cities, the effect of *Hukou* is even greater. Therefore, this implies that the constraints of *Hukou* on aggregate consumption will increase as time goes by.

[Table VIII about here]

Second, if the income level keeps rising and the constraints of *Hukou* on consumption

[19] Data source: State Statistical Bureau of China: The First Report on the Main Statistics of the Sixth Population Census, http://www.stats.gov.cn/tjfx/jdfx/t20110428_402722253.htm

[20] The numbers for Beijing and Shanghai are from their Reports on the Main Statistics of the Sixth Population Census http://www.stats.gov.cn/tjfx/jdfx/t20110428_402722253.htm

are stronger for those with high incomes, aggregate consumption will be constrained by a greater amount as migrants get richer. CHIPS in 1999 and 2002 showed that migrants' per capita real income had risen from 707 yuan/month in 1999 to 784 yuan/month in 2002, which implies that the annual growth rate of migrants' income is 3.4%. In recent years, migrants' income level has risen even faster (Zhang et al., 2011; Ge and Yang, 2011). In order to test the possible effects of rising incomes on consumption under *Hukou* constraints, we added an interaction term of per capita income and the migrant dummy to the baseline model in column 1 of Table IX. We find that the coefficient of the interaction term was significantly negative, which implies that the effects of *Hukou* constraints on consumption will increase as migrants' incomes rise.

Third, if migrants have stronger precautionary savings motivation and face a higher probability of cross-region mobility, they would reduce their consumption of non-necessities. If the consumption gap between urban residents and migrants is greater for non-necessities, the aggregate constraints of *Hukou* on consumption will become greater as migrants get richer and should be consuming more non-necessities. In order to test this hypothesis, we examined the gaps between the two groups in terms of the consumption ratio for sub-category consumption. We also included the interaction term between *ln (per capita income)* and migrant status in the regression in order to capture the income effects on different categories of consumption. Columns 2-7 of Table IX report regression results on food, clothing, household equipment, health and medicine, communication, education and culture. The results show that all of the interaction terms are negative and significant, which implies that migrants have a lower propensity to

consume on all of the sub-categories when their income rises.

[Table IX about here]

First, as regards food, clothing and communication, migrants' propensity to consume over income is lower than that of urban residents by 9.7%, 24.9% and 18.3%, respectively. The relative magnitudes of the coefficients are consistent with the nature of consumption – as food is a necessity, the gap is minimum; in contrast, as clothing and communication are not necessities, the gap is larger. The subsistence consumption levels of migrants for food and clothing are seemingly higher than those of urban households. However, a simple calculation tells us that the per capita income level which equalizes urban residents and migrants as regards their food and clothing consumption is 969 and 211 yuan. In our sample, only nine out of 6784 urban households had a per capita income of less than 969 yuan, which implies that the consumption levels of almost all urban households are higher than migrants' given income levels.

As regards household equipment and health and medicine, migrants' marginal propensity to consume is lower than that of urban residents by 57.3% and 59.8%. However, the migrant dummy is significantly positive. As household equipment is durable, its consumption should be higher for people who move less frequently. Therefore, due to their increased mobility, migrants have a lower propensity to consume durable goods when their income rises. Meanwhile, migrants have to buy some necessary durables when they move to a new place, which leads to higher subsistence durable consumption. As regards health and medicine consumption, higher subsistence consumption levels are due mainly to the lower medical insurance coverage for migrants.

Without medical insurance, migrant households have to pay most medical expenses by themselves. However, with rising incomes, migrants are unwilling to receive more medical services that are not necessary. Therefore, we can observe both a higher level of subsistence consumption and a lower marginal consumption ratio. A calculation tells us that the per capita income level which equalizes urban residents and migrants as regards their consumption of household equipment and medical and health goods is 314 and 827 yuan respectively. This implies that the consumption of these two categories by almost all urban households is higher than migrants' given income levels.

The gaps for education and culture consumption are the largest, as they reach 132.4%. Expenditure on education is an investment in human capital, which is more sensitive to change in one's future income and job stability. As the lack of a local urban *Hukou* reduces income stability but increases interregional mobility, it is not surprising that *Hukou* constraints have the greatest impact on educational expenditure. Furthermore, a lack of local urban *Hukou* would limit the probability that migrants' children will be able to enter state schools, as children are entitled to subsidized state education only in the area of their legal permanent residency (e.g., Afridi, Li, and Ren, 2009). This leads to much lower educational expenditure for migrant households. However, migrants have to pay more for an education in urban areas because of *Hukou* restrictions, which implies that subsistence educational expenditure will be higher for migrants. A simple calculation tells us that the per capita income level which equalizes urban residents and migrants as regards their educational expenditure is 1180 yuan, which implies that almost all urban households consume more in terms of education than the migrants' given income levels.

In recent years, there has been no substantive change in migrants' struggle for equality and the right to city welfare; moreover, recent reforms to the *Hukou* system have actually made the permanent migration of rural peasants to cities harder than it was before (Chan and Buckingham, 2008). Given the increasingly strong restrictions of *Hukou*, coupled with the increasing number of migrants and their total income, the effects of *Hukou* on migrants' consumption are unlikely to shrink.

VII. Conclusions and policy implications

It is estimated that the total number of migrants in China has already reached 221 million, and it is still growing. At the same time, China's household consumption-to-GDP ratio has remained fairly low, and it is still falling. Using CHIPS 2002 data, this paper finds that, compared with urban residents, migrants have a higher level of mobility and lower social safety net coverage. We find that migrants' consumption is lower than that of urban residents by 30.7%, after controlling for other important factors. Careful analysis suggests that consumption heterogeneity is explained mainly by the *Hukou* system, rather than factors such as household characteristics, culture or habits.

The number of migrants is still growing, and they are getting richer and therefore likely to consume more non-necessities. Consequently, the constraints imposed by the *Hukou* system on migrants' consumption are growing in magnitude. The policy implication of this paper is that, for a successful structural change and balanced growth, it is necessary for China to reform the *Hukou* system. The threshold for *Hukou* should be lowered, and public services, including social security status, should be equalized between migrants and urban residents. The *Hukou* system currently presents a major

obstacle to China's quest to become a modern economy (Chan, 2009), and removing the restriction would be an effective way to significantly stimulate China's aggregate consumption and domestic demand, as well as to achieve global economic balance.

References

Afridi, F., Li, S. X., and Ren, Y., 2009, "Social Identity and Inequality: The Impact of China's *Hukou* System," Working Paper. URL: http://www.cdedse.org/pdf/work190.pdf

Ando, A. and Modigliani, F., 1963, "The Life Cycle Hypothesis of Saving: Aggregate Implications and Tests," *American Economic Review*, Vol. 53, No. 1, pp. 55-84.

Attanasio, O. P. and Weber, G., 1995, "Is Consumption Growth Consistent with Intertemporal Optimization? Evidence from the Consumer Expenditure Survey," *Journal of Political Economy*, Vol. 103, No. 6, pp. 1121-1157.

Aziz, J. and Cui, L., 2007, "Explaining China's Low Consumption: The Neglected Role of Household Income," IMF Working Paper 07/181. Available at: http://www.imf.org/external/pubs/cat/longres.cfm?sk=21026.0

Blanchard, O. J. and Giavazzi, F., 2005, "Rebalancing Growth in China: A Three-Handed Approach," MIT Department of Economics Working Paper No. 05-32. Available at SSRN: http://ssrn.com/abstract=862524

Carroll, C. D., 1994, "How Does Future Income Affect Current Consumption?" *Quarterly Journal of Economics*, Vol. 109, No. 1, pp. 111-147.

Carroll, C. D., Rhee, C., and Rhee, B., 1994, "Are There Cultural Effects on Saving? Some Cross-Sectional Evidence," *Quarterly Journal of Economics*, Vol. 109, No. 3, pp. 685-700.

Carroll, C. D., Rhee, C., and Rhee, B., 1999, "Does Cultural Origin Affect Saving Behavior? Evidence from Immigrants," *Economic Development and Cultural Change*, Vol. 48, No. 1, pp. 33-50.

Chamon, M. and Prasad, E., 2010, "Why Are Saving Rates of Urban Households in China Rising?" *American Economic Journal – Macroeconomics*, Vol. 2, No. 1, pp. 93-130.

Chan, K. W., 2009, "The Chinese *Hukou* System at 50," *Eurasian Geography and Economics*, Vol. 50, No. 2, pp. 197–221.

Chan, K. W., and Buckingham, W., 2008. "Is China Abolishing the Hukou System?" *The China Quarterly*, Vol. 195, No. 1, pp. 582-605.

Charles, K. K., Hurst, E., and Roussanov, N., 2009, "Conspicuous Consumption and Race," *Quarterly Journal of Economics*, Vol. 124, No. 2, pp. 425-467.

Deaton, A., 1992, *Understanding Consumption*, Oxford University Press, USA.

Friedman, E. and Lee, C. K., 2010, "Remaking the World of Chinese Labour: A 30-Year Retrospective," *British Journal of Industrial Relations*, Vol. 48, No. 3, pp. 507-533.

Ge, S. and Yang, D. T., 2011, "Labor Market Developments in China: A Neoclassical View," *China Economic Review*, Forthcoming.

Giles, J. and Yoo, K., 2007, "Precautionary Behavior, Migrant Networks, and Household Consumption Decisions: An Empirical Analysis Using Household Panel Data from Rural China," *The Review of Economics and Statistics*, Vol. 89, No. 3, pp. 534-551.

Greenspan, A., 2009, "The Fed Didn't Cause the Housing Bubble," *The Wall Street Journal*, March 11.

Kraay, A., 2000, "Household Savings in China," *The World Bank Economic Review*, Vol. 14, No. 2, pp. 545-570.

Kuijs, L., 2005, "Investment and Saving in China," Policy Research Working Paper No. 3633 (Washington: World Bank). Available at: http://ideas.repec.org/p/wbk/wbrwps/3633.html

Li, Q., 2003, "Factors Affecting the Push and Pull of Migration in China," *Zhongguo Shehui Kexue*, No. 1, pp. 125-136.

Li, S., 2010, "The Economic Situation of Rural Migrant Workers in China," *China*

Perspectives, No. 4, pp. 4-15.

Liu, Z., 2005, "Institution and Inequality: The *Hukou* System in China," *Journal of Comparative Economics*, Vol. 33, No. 1, pp. 133–157.

Meng, X., 2003, "Unemployment, Consumption Smoothing, and Precautionary Saving in Urban China," *Journal of Comparative Economics*, Vol. 31, No. 3, pp. 465–485.

Modigliani, F. and Cao, S. L., 2004, "The Chinese Saving Puzzle and the Life Cycle Hypothesis," *Journal of Economic Literature*, Vol. 42, No. 1, pp. 145-170.

National Bureau of Statistics, 1999-2010, *China Statistics Yearbook*. Beijing: China Statistics Press,.

National Bureau of Statistics, 2008, *Data of Flow of Funds of China, 1992-2004*. Beijing: China Statistics Press.

Naughton, B., 2007, *The Chinese Economy*. Cambridge, MA: MIT Press.

Sheng, L., 2008, *Movement or Migration? An Economic Analysis of the Movement of Rural Labor Force in China*. Shanghai Yuandong Publishing House.

Wang, F. L., 2004, "Reformed Migration Control and New Targeted People: China's Hukou System in the 2000s," *The China Quarterly*, No. 177, pp. 115-132.

Wang, H. Y., Appelbaumb, R. P., Degiulib, F., and Lichtenstein, N., 2009, "China's New Labour Contract Law: Is China Moving towards Increased Power for Workers?" *Third World Quarterly*, Vol. 30, No. 3, pp. 485-501.

Whyte, M. K., 2006, "One Country, Two Societies? Rural–Urban Inequality in Contemporary China," Paper presented at Conference on Rethinking the Rural-Urban Cleavage in Contemporary China, October 6–8, 2006, Harvard University, Cambridge, MA.

Whalley, J. and Zhang, S., 2007, "A Numerical Simulation Analysis of (Hukou) Labour Mobility Restrictions in China," *Journal of Development Economics*, Vol. 83, No. 2, pp. 392-410.

Wei, S. and Zhang, X., 2011, “The Competitive Saving Motive: Evidence from Rising Sex Ratios and Savings Rates in China,” *Journal of Political Economy*, Vol. 119, No. 3, pp. 511-564.

Yang, R. and Chen, B., 2009, "Higher Education Reform, Precautionary Saving and Household Consumption," *Economic Research Journal (Chinese)*, Vol. 8, pp. 113-124.

Zhang, H., 2010, “The Hukou System's Constraints on Migrant Workers' Job Mobility in Chinese Cities,” *China Economic Review*, Vol. 21, No. 1, pp. 51-64.

Zhang, X., Yang, J., and Wang, S., 2011, "China has Reached the Lewis Turning Point," *China Economic Review*, Forthcoming.

Zhu, Y., 2003, “The Floating Population's Household Strategies and the Role of Migration in China's Regional Development and Integration,” *International Journal of Population Geography*, Vol. 9, No. 6, pp. 485-502.

Zhu, Y., 2004, “Workers, Unions and the State: Migrant Workers in China's Labour-Intensive Foreign Enterprises,” *Development and Change*, Vol. 35, No. 5, pp. 1011-1035.

Table I. Consumption expenditure as a percentage of GDP (2009)

Country	U.S.	U.K.	German	Japan	Korea	India	Brazil	China
Final consumption expenditure (%)	89	89	79	79	70	68	84	48
Household final consumption expenditure (% of GDP)	71	65	59	60	54	56	62	35

Data source: World Development Indicator (WDI), available at:

http://data.worldbank.org/indicator/NE.CON.TETC.ZS and

http://data.worldbank.org/indicator/NE.CON.PETC.ZS

Note: Final consumption expenditure (formerly total consumption) is the sum of household final consumption expenditure (private consumption) and general government final consumption expenditure (general government consumption).

Table II. Summary statistics of major household characteristics[21]

	Mean: Urban residents	Mean: Migrants	t-statistics: Difference
Total consumption (yuan)	18163.1	11561.2	21.6
Total income (yuan)	24368.0	16573.1	19.6
Age of the head	47.9	36.0	43.4
Years of education of the head	10.7	8.1	31.6
No. of family members	3.0	2.7	15.6
Total wealth (yuan)	137655.1	37331.8	25.2

[21] We removed observations with outlier values for some variables, i.e., observations with zero household consumption and income, and for which the head of the family was older than 80 or younger than 20. In total, 88 observations were excluded.

Table III. Consumption behavior of migrants and urban residents: Baseline results

VARIABLE	(1) lncon	(2) Ln (con+Adj-remittance)	(3) Ln (con+ +remittance)	(4) Per capita con	(5) 1-(con/hhinc)
Migrant	-0.307***	-0.245***	-0.177***	-1,274.961***	0.130***
	[0.019]	[0.019]	[0.018]	[95.799]	[0.023]
Ln (income)	0.625***	0.616***	0.641***	0.349***	0.342***
	[0.013]	[0.015]	[0.013]	[0.015]	[0.031]
Age	-0.001	-0.001	-0.001**	-3.276	-0.001
	[0.001]	[0.001]	[0.001]	[2.998]	[0.001]
Education	0.011***	0.011***	0.010***	57.642***	-0.013***
	[0.002]	[0.002]	[0.002]	[9.808]	[0.002]
Family size	-0.030***	-0.044***	-0.057***	-159.024***	0.039***
	[0.006]	[0.006]	[0.006]	[34.134]	[0.006]
Ln (asset_per)	0.020***	0.020***	0.016***	0.005***	-0.018***
	[0.004]	[0.004]	[0.004]	[0.002]	[0.006]
Health dummy	Yes	Yes	Yes	Yes	Yes
Ownership dummy	Yes	Yes	Yes	Yes	Yes
Occupation dummy	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes
Contract dummy	Yes	Yes	Yes	Yes	Yes
Constant	2.889***	3.028***	2.915***	3,580.999***	-2.711***
	[0.130]	[0.144]	[0.130]	[413.240]	[0.264]
Observations	8,750	8,750	8,750	8,750	8,750
R-squared	0.657	0.641	0.650	0.585	0.188

Note: The figures in brackets are robust standard errors; *, ** and *** indicate significance levels of 10%, 5% and 1% respectively.

Table IV. Labor risk of urban residents and migrants

	Migrant (%)	Non-migrant (%)
Job and contract		
Fixed or long-term contract	5.24	77.52
Temporary or short-term contract	25.78	14.03
Individual business	65.91	5.88
Other	3.07	2.57
Major sources of income		
Wage or salary income	42.76	70.37
Individual business income	53.68	4.14
Other	3.56	25.49

Table V. Consumption heterogeneity across different regions

VARIABLE	(1) lncon	(2) lncon	(3) lncon	(4) lncon	(5) lncon
Migrant	-0.717***	-0.468***	-0.365***	-0.284***	-0.231***
	[0.090]	[0.056]	[0.041]	[0.033]	[0.033]
Lninc	0.413***	0.592***	0.594***	0.659***	0.655***
	[0.048]	[0.032]	[0.026]	[0.027]	[0.023]
Age	-0.003	-0.001	0.001	-0.002*	-0.004***
	[0.003]	[0.001]	[0.001]	[0.001]	[0.001]
Edu.	0.019**	0.013***	0.014***	0.005	0.006**
	[0.008]	[0.005]	[0.003]	[0.003]	[0.003]
Population	-0.072***	-0.015	-0.021*	-0.015	-0.043***
	[0.027]	[0.016]	[0.012]	[0.011]	[0.010]
Lnasset	0.058***	0.054***	0.012*	0.028***	0.016***
	[0.017]	[0.010]	[0.007]	[0.010]	[0.005]
Health dummy	Yes	Yes	Yes	Yes	Yes
Ownership dummy	Yes	Yes	Yes	Yes	Yes
Occupation dummy	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes
Contract dummy	Yes	Yes	Yes	Yes	Yes
Constant	4.466***	2.524***	3.009***	2.536***	2.448***
	[0.518]	[0.312]	[0.281]	[0.243]	[0.211]
Observations	582	1370	2378	1762	3240
R-squared	0.671	0.673	0.609	0.668	0.587

Notes:

(a) The results in each column are estimates for sub-samples consisting of:
(1) Beijing;
(2) Coastal capital cities of Beijing, Liaoning, Jiangsu and Guangdong;
(3) Non-coastal capital cities of Shanxi, Anhui, Henan, Hubei, Chongqing, Sichuan, Yunnan and Gansu;
(4) Coastal non-capital cities;
(5) Non-coastal non-capital cities.

(b) The figures in brackets are robust standard errors; *, ** and *** indicate the significance levels of 10%, 5% and 1% respectively.

Table VI. Consumption heterogeneity and family structure

Dependent var.: Ln (con)	(1) Family size≤3	(2) Age≤50	(3) Not owning a house	(4) No. of children	(5) No. of boys
Migrant	-0.323***	-0.299***	-0.289***	-0.296***	-0.296***
	[0.022]	[0.020]	[0.027]	[0.019]	[0.019]
Ln (income)	0.637***	0.603***	0.530***	0.629***	0.629***
	[0.014]	[0.017]	[0.024]	[0.013]	[0.013]
Age	-0.001	0.002**	0.001	-0.000	-0.000
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Education	0.012***	0.014***	0.016***	0.011***	0.011***
	[0.002]	[0.002]	[0.003]	[0.002]	[0.002]
Family size	-0.002	-0.027***	-0.037***	-0.040***	-0.040***
	[0.011]	[0.009]	[0.011]	[0.006]	[0.006]
Ln (asset_per)	0.018***	0.019***	0.017***	0.020***	0.020***
	[0.004]	[0.004]	[0.005]	[0.004]	[0.004]
No. children				0.019***	0.020***
				[0.005]	[0.006]
No. boys					-0.001
					[0.005]
Health dummy	Yes	Yes	Yes	Yes	Yes
Ownership dummy	Yes	Yes	Yes	Yes	Yes
Occupation dummy	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes
Contract dummy	Yes	Yes	Yes	Yes	Yes
Constant	2.721***	2.932***	3.535***	2.839***	2.839***
	[0.149]	[0.168]	[0.252]	[0.132]	[0.132]
Observations	7145	6157	3222	8750	8750
R-squared	0.653	0.657	0.590	0.657	0.657

Note: The figures in brackets are robust standard errors; *, ** and *** indicate the significance levels of 10%, 5% and 1% respectively.

Table VII. Consumption heterogeneity and culture

Independent var.: Ln (con)	(1) Urban residents born in rural areas	(2) Condition (1) education≤9	(3) Hukou due to joining the army or land expropriated by gov.	(4) Years living in urban areas
Migrant	-0.259***	-0.245***	-0.221***	
	[0.027]	[0.033]	[0.042]	
Ln (income)	0.531***	0.476***	0.457***	0.404***
	[0.021]	[0.024]	[0.025]	[0.027]
Age	0.000	0.001	0.001	0.001
	[0.001]	[0.001]	[0.001]	[0.001]
Education	0.015***	0.015***	0.016***	0.017***
	[0.003]	[0.004]	[0.004]	[0.004]
Family size	-0.034***	-0.035***	-0.032***	-0.038***
	[0.009]	[0.010]	[0.011]	[0.013]
Ln (asset_per)	0.023***	0.026***	0.028***	0.031***
	[0.005]	[0.006]	[0.006]	[0.007]
Years in urban areas				0.000
				[0.000]
Health dummy	Yes	Yes	Yes	Yes
Ownership dummy	Yes	Yes	Yes	Yes
Occupation dummy	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes
Contract dummy	Yes	Yes	Yes	Yes
Constant	3.485***	3.880***	3.964***	4.258***
	[0.214]	[0.265]	[0.287]	[0.311]
Observations	3741	2628	2376	1966
R-squared	0.587	0.490	0.497	0.422

Note: The figures in brackets are robust standard errors; *, ** and *** indicate the significance levels of 10%, 5% and 1% respectively.

Table VIII. The number of rural-to-urban migrants and their wage level

	Rural labor force (million)	Non-agricultural rural labor force (million)	Share of non-agricultural rural labor force (%)	Rural migrant labor force (million)	Share of rural migrants (%)
1985	370.65	62.33	16.8	8.00	2.2
1986	379.90	66.82	17.6	9.00	2.4
1987	390.00	70.50	18.1	10.50	2.7
1988	400.76	73.61	18.4	12.50	3.1
1989	409.39	75.58	18.5	15.00	3.7
1990	420.10	76.94	18.3	18.00	4.3
1991	430.93	79.16	18.4	21.40	5
1992	438.02	83.80	19.1	25.92	5.9
1993	442.56	92.09	20.8	27.52	6.2
1994	446.54	97.98	21.9	28.88	6.5
1995	450.42	102.57	22.8	30.00	6.7
1996	452.88	103.78	22.9	34.00	7.5
1997	459.62	106.10	23.1	38.90	8.5
1998	464.32	108.04	23.3	49.36	10.6
1999	468.97	109.55	23.4	52.40	11.1
2000	479.62	112.24	23.4	76.00	15.8
2001	482.29	115.32	23.9	90.50	18.8
2002	484.72	118.73	24.5	104.70	21.6
2003	488.84	120.80	24.7	113.90	23.3
2004	496.76	127.53	25.6	118.23	23.8
2005	503.87	13480	26.7	125.78	24.2

Data source: Sheng (2008, p. 9 Table 1-4, p. 73, Table 4-1).

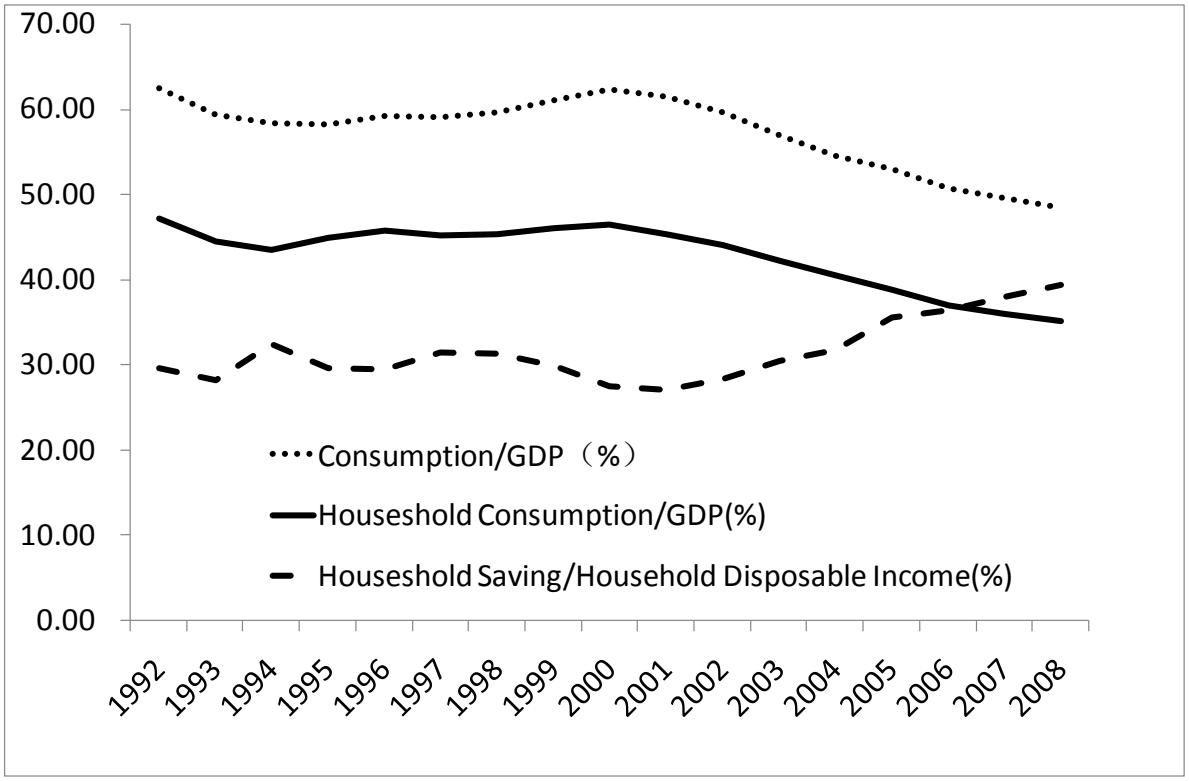
Table IX. Consumption behavior of migrants and urban residents: Sub-category consumption

Independent variable: Ln (sub-category consumption)	(1) Lncon	(2) Food	(3) Clothing	(4) Household equipment	(5) Health and medicine	(6) Commu-nication	(7) Education and culture
Migrant	2.165***	0.667***	1.333**	3.295***	4.307***	0.587	9.365***
	[0.202]	[0.203]	[0.549]	[0.744]	[0.786]	[0.672]	[0.855]
Ln (income)	0.713***	0.500***	0.953***	1.056***	0.941***	1.079***	1.139***
	[0.011]	[0.011]	[0.030]	[0.037]	[0.047]	[0.033]	[0.046]
Migrant*Ln (income)	-0.289***	-0.097***	-0.249***	-0.573***	-0.598***	-0.184**	-1.324***
	[0.023]	[0.024]	[0.063]	[0.088]	[0.092]	[0.078]	[0.100]
Age	-0.002***	0.003***	-0.027***	-0.003	0.017***	-0.014***	-0.030***
	[0.001]	[0.001]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Education	0.009***	0.001	0.026***	0.035***	0.026***	0.030***	0.045***
	[0.002]	[0.002]	[0.005]	[0.006]	[0.007]	[0.005]	[0.007]
Family size	-0.030***	-0.090***	0.079***	0.069***	0.153***	0.058***	0.695***
	[0.006]	[0.006]	[0.018]	[0.023]	[0.027]	[0.019]	[0.029]
Ln (asset_per)	0.024***	0.006	0.089***	0.117***	0.029*	0.145***	0.142***
	[0.004]	[0.005]	[0.012]	[0.014]	[0.016]	[0.014]	[0.018]
Health dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ownership dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contract dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Health dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.143***	3.466***	-2.381***	-5.824***	-5.274***	-4.635***	-6.378***
	[0.114]	[0.114]	[0.324]	[0.428]	[0.516]	[0.367]	[0.499]
Observations	8750	8750	8750	8750	8750	8750	8750
R-squared	0.671	0.533	0.381	0.407	0.243	0.412	0.400

Note: The figures in brackets are robust standard errors; *, ** and *** indicate significance levels of 10%, 5% and 1% respectively.

Figure I

Consumption ratio and saving ratio of China's households (1992~2008)



Data sources:

National Bureau of Statistics, *China Statistical Yearbook*, 2005~2010;

National Bureau of Statistics, *Data of Flow of Funds of China*, 1992~2004, Beijing:

China Statistics Press, 2008.