
8. Consumption and Savings of Migrant Households: 2008–14

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Introduction

China's economic growth can be divided into two phases: the export-oriented phase and the domestic demand-driven phase. The main dividing point is the onset of the Global Financial Crisis (GFC). In late 2008 and early 2009, China's exports fell by more than 20 per cent, which alerted Chinese policymakers to the unreliability of growth depending purely on exports. Government spending on domestic infrastructure was the main driver of China's economic recovery from the GFC. Thereafter, many other policies were enacted to stimulate domestic demand, including increasing public sector wages and agricultural price subsidies, increasing public holidays to encourage tourism, providing subsidies for farmers to purchase electrical goods and cars and speeding up social insurance reform to reduce precautionary savings. To date, the transition from export-led to domestic demand-driven growth is ongoing, and its success, to a large extent, depends on household consumption and saving responses.

China has an unusually high household saving rate. Studies on Chinese household savings have largely concluded that this relates to precautionary saving motives (Meng 2003; Chamon et al. 2013; Choi et al. 2014). In the pre-reform era, urban residents enjoyed cradle-to-grave social welfare coverage. In the 1990s, market-oriented reform gradually eroded these free public services and social security, and left households responsible for funding their own needs. Reforms to housing, education, pensions and health care required households to be more forward-looking and more cautious. As a result, household savings in cities increased dramatically from the mid-1990s onwards (for example, Meng 2003; Cai et al. 2012; Chamon et al. 2013; Choi et al. 2014). While education reform affected rural households, the main factor impacting on rural savings was the change from communal welfare provision to the household

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responsibility system. Before these reforms, for example, elderly individuals in rural areas were looked after by the commune with a low level of welfare provision. After the household responsibility system was introduced, most commune-provided 'social welfare' disappeared. Households needed to save for their lean days (Cai et al. 2012). On top of this, another important saving motive in rural areas relates to the marriage prospects of one's offspring—in particular, sons. The implementation of the One-Child Policy, together with the traditional preference for having sons, created an acute imbalance in the sex ratio, mostly in rural China, which substantially increased the cost of marriage and generated precautionary savings motives in parents (Wei and Zhang 2011).

To date, there have been almost no studies discussing the savings and consumption behaviour of migrants in China, even though rural–urban migrants make up about 40 per cent of the urban labour force. This chapter begins to fill this gap.

In general, people living in urban areas spend more of their income than their rural counterparts and people living in large cities spend more than those in small cities. This is not only because urban dwellers have higher incomes, but also because urban centres provide more options for consumption, which, in turn, generate demand. Data from the Rural–Urban Migration in China (RUMiC) project have shown that migrants in cities spend more than their counterparts living in rural areas (see Figure 8.1) and this is the case for all subcategories of consumption (see Figure 8.2). Thus, one way to move towards transformation from an export-led to a domestic demand-driven development strategy ought to be to encourage more migration, especially in an economy in which unskilled labour is in short supply in cities. The Chinese Government has so far not fully realised the link between migration and consumption-driven growth. This can be seen from the slow progress made in helping more people to migrate, encouraging them to migrate to large cities and helping those workers who have already migrated to settle permanently in cities. It is also evident in the developing small-city urbanisation strategy implemented since 2014.

In this chapter, we examine whether the policies encouraging consumption implemented so far have had any impact on the consumption and saving behaviour of rural–urban migrants and what are the potential constraints on increasing the consumption of migrant workers.

The rest of the chapter is organised as follows. The next section discusses current institutional restrictions on migration and how these affect migrant consumption and saving behaviour. Section three presents the data and the general patterns of migrant consumption and saving over the period 2008–14. Section four investigates the evolution of migrant precautionary saving behaviour, and section five concludes and provides some policy implications.

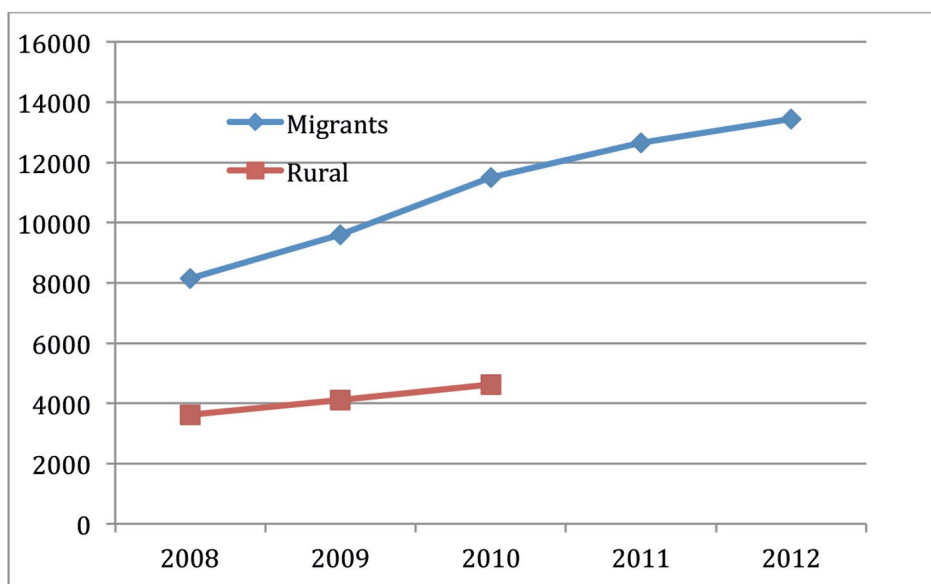


Figure 8.1 Comparison of annual per capita expenditure: Rural and migrants

Source: Migrant Household Survey of the RUMiC Project, 2008–12 wave, and Rural Household Survey of the RUMiC Project, 2008–10 wave.

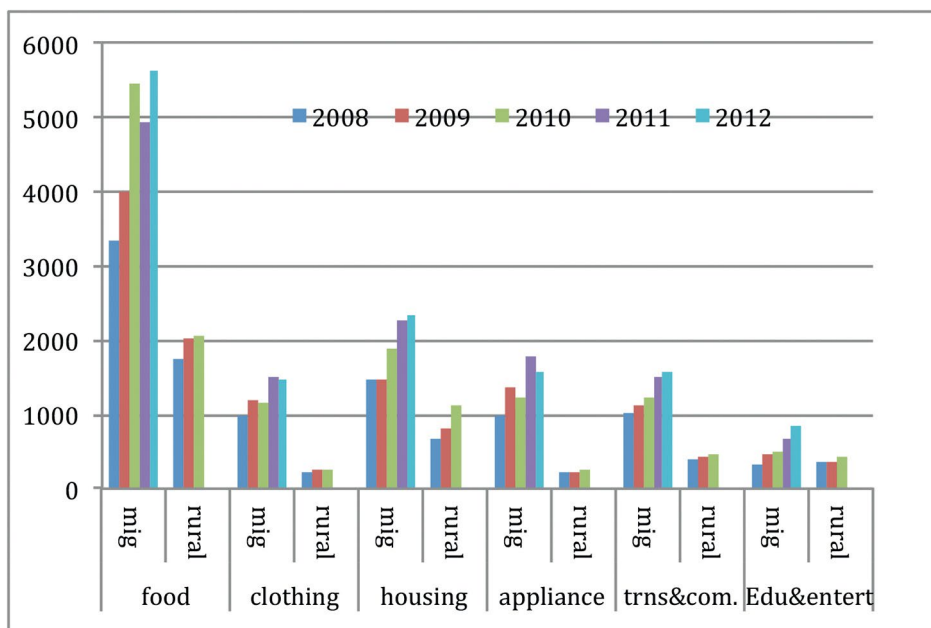


Figure 8.2 Comparison of detailed consumption items: Rural and migrants

Source: Migrant Household Survey of the RUMiC Project, 2008–12 wave, and Rural Household Survey of the RUMiC Project, 2008–10 wave.

Background

Migrants in China are, in general, treated as 'guest workers'. Despite their significant contribution to economic growth, they are restricted in the type of job they can obtain and in their access to urban social services in the destination cities, including access to education, health care, unemployment benefits and pensions. These restrictions prevent migrant workers from staying in cities in the long run and also from bringing their families to the cities (Du et al. 2006). Inevitably, migrants do not regard the city they are working in as their 'home' and this, to a large extent, affects their consumption behaviour. Migrants have always been thought of as a group who come to cities to make and save money so that eventually they can go back to their rural home to build a better life. Consequently, they work hard, spend less and save more.

In recent years, the Chinese Central Government has realised the drawbacks of the 'guest worker' system and has introduced new laws and regulations to protect migrants' benefits and increase their access to urban services. These attempts to eliminate discrimination against migrants have had rather limited success for systemic reasons. Consider children's schooling as an example. Although the Central Government has announced policies that mean migrant children should be treated in the same way as local urban kids and should be allowed to enrol in urban public schools, it was expected that funding for the education of these children would be provided by local governments. However, local governments' priority is to provide the best services for their local constituents and they are therefore reluctant to implement the policy (Chen and Feng 2013). As a result, most migrants leave their school-aged children in their hometown. The same situation occurs with regard to other services and welfare provisions for migrants.

In general, over the past eight years, there have been some improvements in social services and welfare provision for migrants, but the pace of improvement is rather slow. For example, although the Labour Contract Law implemented in 2008 clearly requires all employers to pay social insurance for migrant workers, until 2014 only 30 per cent of migrant workers had either pension or health insurance, and less than 26 per cent had unemployment insurance (RUMiC survey results). In terms of children being left behind in rural hometowns, in 2008, nearly 60 per cent of children aged 15 and below were left behind, and by 2014 the figure had reduced to 51 per cent. That is, even in 2014, almost half of migrants' children were still being left behind in rural areas.

In these circumstances, the consumption and saving behaviour of migrants should be very different from that of their urban- and rural-resident counterparts, largely because of the unsettled nature of their 'guest worker' status.

Data and general trends in consumption and savings

The data used for this study are from the RUMiC surveys for 2008 to 2014. The survey is conducted annually in 15 cities in nine provinces. These cities include coastal migrant destination cities, such as Guangzhou, Shenzhen, Dongguan, Shanghai, Wuxi, Nanjing, Hangzhou and Ningbo, as well as major interior destination cities: Chengdu, Chongqing, Wuhan, Hefei, Bengbu, Zhengzhou and Luoyang. The sampling of the RUMiC survey differs significantly from any other household surveys of migrant workers in China, which mainly sample migrants at urban residential addresses. Because of China's internal migration policy, many migrants move to the city alone and do not have their family with them, making it more likely that they live in factory dormitories or other workplace-based accommodation. Even if migrants come to the city with their families, the high rental costs have deterred them from living in urban residential accommodation. As a result, the normal urban household survey is more likely to offer a biased sample of migrant workers. To avoid this potential bias, RUMiC adopted a sampling frame that is based on a census of potential migrants' workplaces.²

The RUMiC is designed to be a longitudinal survey, which follows migrants over time. However, due to the nature of the population—which is young and mobile—the attrition rate has been high. In particular, in 2009, when the GFC reduced China's exports by 20 per cent and forced many migrants to return home, the attrition rate was about 63 per cent. The attrition rate has been reducing gradually since 2009, from 63 per cent to 35 per cent in 2014. To maintain the original sample size, each year the RUMiC team creates a random refreshment sample, the 'new-household sample'. Thus, apart from 2008, in each subsequent year, the RUMiC survey has had two subsamples: one traces part of the previous year's sample ('old-household sample') and one draws a new random sample ('new-household sample'). The new-household sample gives us a representative picture of migrants in general, while the old-household sample presents the dynamic picture of migrant life and work (Meng 2013).

2 For detailed discussion of the RUMiC sampling procedure, see Gong et al. (2008).

General patterns and the distributional perspective

We first examine the patterns over time of income, consumption and saving. All the income and expenditure variables are deflated by provincial urban consumer price indices (CPIs) using 2008 as 100. We also adjust for migrant household size (number of household members living in the same address in the city) to obtain per capita values. In addition, following the convention in the literature, we trim the top and bottom 1 per cent of the sample based on income, expenditure and saving variables. The saving rate is defined as Equation 8.1.

Equation 8.1

$$SR_i^1 = \frac{Inc_i - Cons_i}{Inc_i}$$

In the equation, SR_i is the saving rate for household i , Inc_i is household i 's annual income and $Cons_i$ refers to its annual consumption expenditure. Because of the special nature of the population we examine (migrants), we also define a second saving rate variable (Equation 8.2).

Equation 8.2

$$SR_i^2 = \frac{Inc_i - Cons_i - Remit_i}{Inc_i}$$

In this equation, $Remit_i$ indicates migrant households' total annual remittances. In the survey, there are four components of household saving: 1) investment saving (purchase of security and stocks, housing purchase and investment in family business); 2) remittances; 3) transfers and other non-consumption expenditure; and 4) residual saving, which should comprise households' annual increments in deposits and cash-in-hand. The first three components form household non-consumption expenditure, while the last component can be obtained by subtracting total household consumption expenditure and non-consumption expenditure from household income.

Table 8.1 reports summary statistics for real per capita income, consumption expenditure, non-consumption expenditure, remittances and the two saving rates defined above. The first panel of the table presents the total sample information while the next two panels report for the top and bottom 20 percentile samples based on per capita real income. Over the past seven years, migrant per capita real income increased by 9 per cent per annum, and the growth rate for the low-income group was lower, at 7 per cent per annum. Real per capita consumption expenditure increased by 8 per cent per annum, on average, but it was much higher for the low-income group (10 per cent per annum) than for the

high-income group (5 per cent). Real per capita non-consumption expenditure increased, on average, by 5 per cent per annum but the growth occurred mainly at the top of the distribution. The bottom two decile households actually had a reduction in non-consumption of 4 per cent per year over the period, while the top two decile households had an increase of 8 per cent per year. Remittances also followed the same pattern as non-consumption expenditure, with the low-income group sending less of their income home relative to the earlier years, while the high-income group sent more. If we examine the value of remittances, the top income group is sending three to 10 times the amount of money back to their rural homes as their low-income counterparts. The last two columns of the table present the two saving rates, with and without remittances. Over the seven years, the average SR_1 has been hovering around 36 to 38 per cent, but there is huge diversity in savings across different income groups. The top two income decile households saved about 40 per cent at the beginning of the period and more than 50 per cent at the end of the period. The low-income group, however, had a reduction in their saving rate, dropping from 27 per cent at the beginning to 10 per cent at the end of the period. Excluding remittances from savings, the average saving rate increased over the period from 23 per cent in 2008 to 26 per cent in 2014. But most of the increase in savings is due to the top income group's saving.³

We now turn to year-on-year changes and plot log real per capita consumption and savings against log real per capita income by year. The upper panel of Figure 8.3 presents these unconditional relationships and shows that between 2010 and 2011 there seems to be a 'structural' change, with much steeper (flatter) consumption (saving) and income relationships in the earlier years (2008–10) than in the later years (2011–14). The clearest structural change can be observed in consumption and savings, which differ between the two periods for the high- and low-income groups. In both cases, the early year curves intercept with later year curves, suggesting an opposite change between the two periods for the high- and low-income groups.

³ We also present the same summary statistics for the new-household sample (see Appendix Table A8.1), and the patterns are almost the same as for the total sample.

Table 8.1 Household income, consumption and saving: Full sample

Total sample	Real per capita income	Real per capita consumption	Real per capita non-consumption	Real per capita remittances	Saving rate	Saving rate excluding remittances	No. of observations
2008	16,225	9,838	3,412	2,266	0.370	0.228	4,731
2009	18,780	12,172	3,975	2,819	0.330	0.192	4,981
2010	20,911	13,505	3,247	2,071	0.334	0.238	5,126
2011	24,001	13,292	3,571	2,361	0.385	0.292	4,967
2012	24,374	13,834	3,867	2,659	0.377	0.273	4,922
2013	27,504	15,697	5,459	3,723	0.364	0.243	4,332
2014	29,004	16,471	4,713	3,463	0.361	0.256	4,223
Average annual growth	0.087	0.076	0.047	0.062			
Top 20% income group:							
2008	29,218	16,534	5,476	3,675	0.431	0.303	
2009	32,694	20,250	8,194	5,688	0.379	0.208	
2010	37,100	23,094	5,602	3,540	0.375	0.277	
2011	42,769	20,041	6,403	4,299	0.523	0.421	
2012	43,547	20,916	7,155	4,993	0.511	0.394	
2013	49,668	23,219	1,0914	7,947	0.523	0.360	
2014	51,753	23,622	9,090	7,269	0.536	0.393	
Average annual growth	0.085	0.052	0.075	0.102			

Total sample	Real per capita income	Real per capita consumption	Real per capita non-consumption	Real per capita remittances	Saving rate	Saving rate excluding remittances	No. of observations
Bottom 20% income group:							
2008	7,846	5,596	2,075	1,105	0.268	0.130	
2009	9,142	6,938	1,438	889	0.225	0.132	
2010	9,659	7,330	1,454	735	0.228	0.154	
2011	10,255	83,95	1,446	629	0.145	0.085	
2012	11,115	90,18	1,889	948	0.160	0.072	
2013	12,070	10,427	1,958	852	0.104	0.037	
2014	12,362	10,708	1,554	756	0.102	0.044	
Average annual growth	0.067	0.097	-0.040	-0.053			

Source: RUMiC survey, 2008–14.

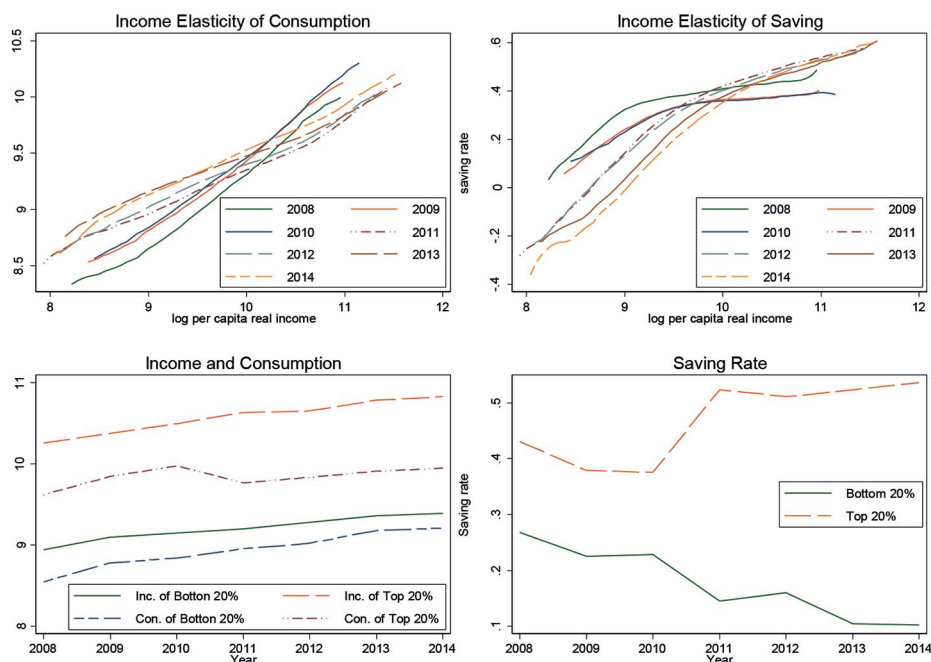


Figure 8.3 Consumption and saving by income, 2008–14

Source: Migrant Household Survey of the RUMiC Project, 2008–14 wave.

To further understand these changes, we plot the average log consumption and savings rates for the top and bottom 20 percentiles in the bottom panel of Figure 8.3. The left bottom panel (income and consumption) reveals that for both high- and low-income groups real per capita income has been increasing, but the real consumption change over time differs significantly between the two groups. The major difference happens between 2010 and 2011, where there is a significant reduction in real per capita consumption for the top two decile income groups. Meanwhile, for the bottom income group, real per capita consumption has been increasing continuously and, at the end of the period, the rate of increase in consumption seems to be faster than the rate of increase for income. This difference is probably one of the causes of the structural change we observed in the upper panel of the figure.

Next, we examine the detailed consumption and saving items to identify the major consumption component that generated the structural change. In particular, we examine food, health, education, housing and other expenditure within consumption. Figure 8.4 presents the itemised consumption levels for the top and bottom 20 percentile households. There are a few general points worth noting. First, food consumption is the single most important item for migrant workers, and is more than double the level of the second most important item, housing. Second, the change in consumption between 2010 and 2011 seems

to occur mainly because of the food consumption change in the top income group. Why does this happen? We examined the change in general and food prices over this period and discovered that between 2010 and 2011 food prices increased dramatically and, within food, the price of meat changed the most (see Figure 8.5). Not only did meat prices increase significantly between 2010 and 2011, but also, this came after a drop in meat prices between 2008 and 2010. The pattern observed in our food consumption graph (Panel 1 of Figure 8.4) seems to coincide very well with the food price pattern. In particular, the consumption level of the top income group, who are likely to consume more meat, seems to have been affected the most by the change in meat prices—increasing when the meat price dropped and reducing when meat prices increased. The middle income group was also affected somewhat, whereas the bottom group—who presumably are not large consumers of meat—was the least affected. A possible explanation is that due to the sharp increase in meat prices, the top income group began to substitute other food for meat, which generated lower overall food consumption levels for this group. For the poor, however, perhaps they were already eating basic foods so food substitution is unlikely and their food consumption levels were unaffected between 2010 and 2011. After 2011, the prices of food and meat increased much more slowly, which would explain why food consumption in general for all income groups has been increasing.

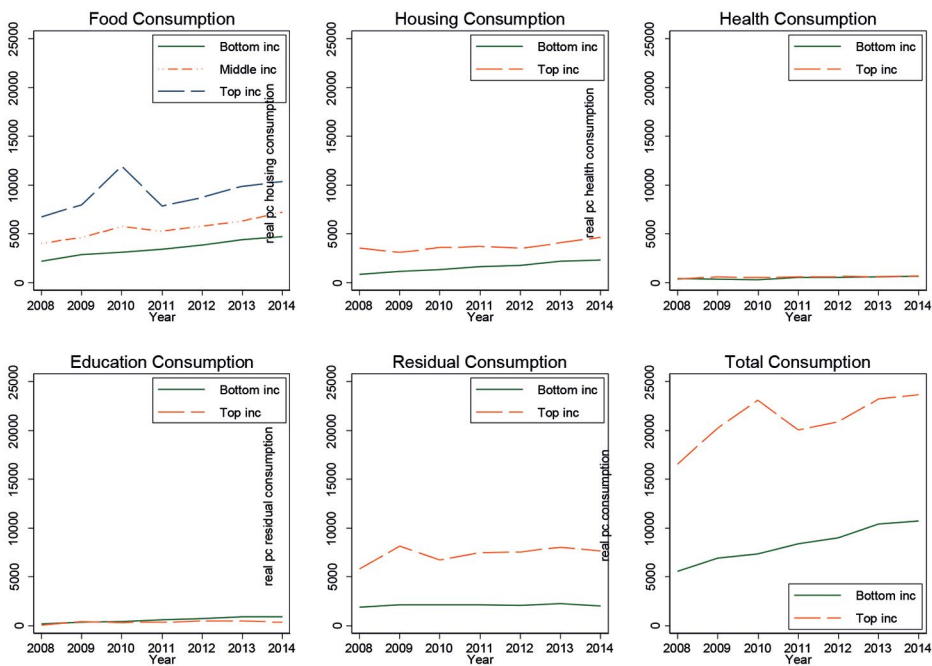


Figure 8.4 Consumption components for bottom and top income groups, 2008–14

Source: Migrant Household Survey of the RUMiC Project, 2008–14 wave.

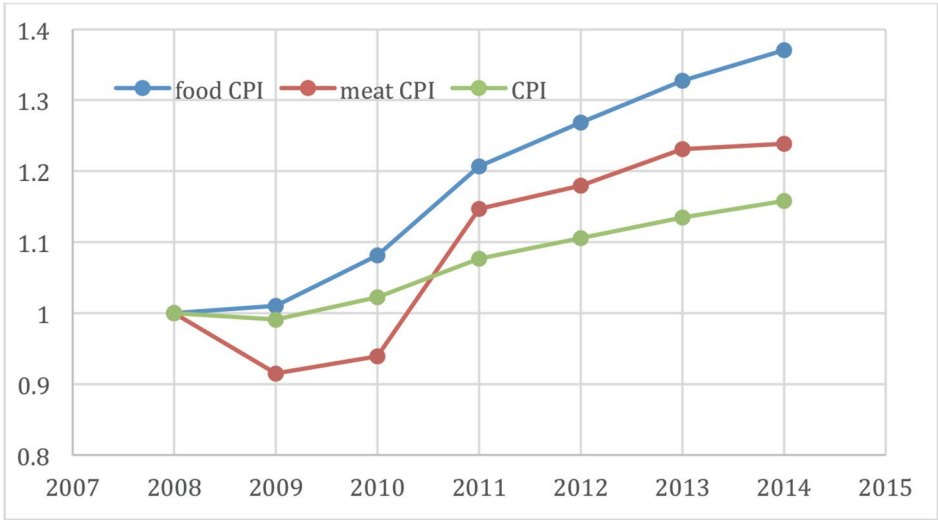


Figure 8.5 Price indices, 2008–14

CPI = consumer price index

Source: National Bureau of Statistics (various years).

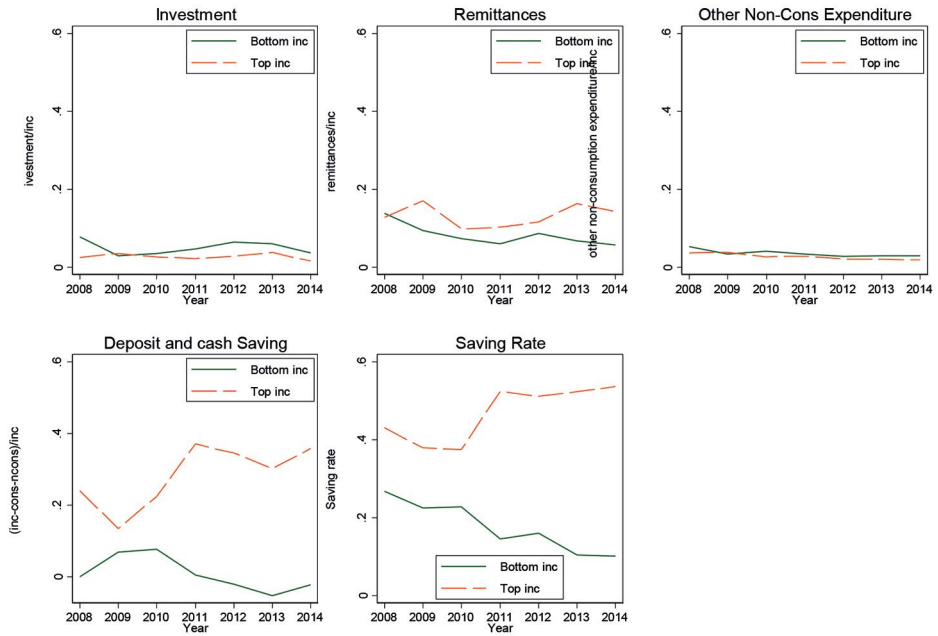


Figure 8.6 Saving components for bottom and top income groups, 2008–14

Source: Migrant Household Survey of the RUMiC Project, 2008–14 wave.

For the saving rate, we look at investment (stock market, housing purchase and production-related investment), remittances, other non-consumption expenditure as well as residual savings (increments in bank deposits and cash-in-hand). Figure 8.6 reveals that the saving increase for the top income migrant group was not used for investment, nor did it go to other non-consumption expenditure. Although remittances increased slightly, they reduced again in 2014. It seems the majority of the increase in the top income group's saving went into residual savings, suggesting a strong precautionary motive.

Migration restrictions and the consumption/saving pattern

In this subsection, we examine the pattern of consumption and savings in response to migration restrictions. To this end, we examine two sets of institutional restriction indicators: 1) whether migrants with family members left behind behave differently than their counterparts without family members left behind; and 2) whether migrants with social insurance have different behaviour relative to their counterparts without social insurance. For the first indicator, we divide our sample into three household types: 1) households whose head is married and either their children or their spouse is left behind in a rural village; 2) households whose head is married but without a spouse or children left behind; and 3) households whose head is single. The indicator for households' social insurance status is set to one if the household head has either a pension or health insurance, and zero otherwise.

Table 8.2 presents income level, consumption and remittance shares of income and saving rates with and without remittances for these five types of household groups. Panels A to C investigate consumption and saving patterns for households with and without members left behind, whereas panels D and E compare consumption and saving patterns for household heads with and without a pension and/or health insurance.

Table 8.2 Household income, consumption and saving for different groups: Full sample

	Real per capita income	Real per capita consumption	Remittances as % of income	Saving rate	Saving rate excluding remittances	No. of observations
Single:						
2008	16,884	10,676	0.106	0.357	0.247	2,175
2009	20,231	13,399	0.114	0.332	0.223	2,183
2010	22,505	15,140	0.087	0.319	0.232	2,249
2011	26,279	14,914	0.082	0.394	0.314	2,008
2012	26,512	15,649	0.091	0.382	0.292	1,756
2013	31,553	18,980	0.117	0.367	0.251	1,414
2014	34,275	20,186	0.107	0.383	0.282	1,187
Average annual growth	0.107	0.095				
No family left behind:						
2008	13,274	8,413	0.050	0.313	0.262	1,037
2009	14,621	10,340	0.106	0.260	0.166	1,278
2010	16,446	10,885	0.038	0.291	0.251	1,380
2011	18,155	10,976	0.044	0.306	0.259	1,515
2012	19,541	11,725	0.057	0.319	0.257	1,673
2013	21,447	13,145	0.058	0.293	0.240	1,666
2014	22,517	13,917	0.051	0.292	0.244	1,824
Average annual growth	0.078	0.075				

	Real per capita income	Real per capita consumption	Remittances as % of income	Saving rate	Saving rate excluding remittances	No. of observations
With family left behind:						
2008	17,298	9,609	0.232	0.426	0.177	1,519
2009	20,193	11,949	0.228	0.387	0.168	1,520
2010	22,633	13,463	0.156	0.397	0.234	1,497
2011	26,965	13,468	0.158	0.454	0.296	1,444
2012	27,275	14,061	0.170	0.438	0.267	1,493
2013	30,991	15,384	0.226	0.456	0.238	1,252
2014	33,605	16,677	0.200	0.444	0.247	1,212
Average annual growth	0.010	0.082				
With insurance:						
2008	18,530	11,045	0.131	0.385	0.259	1,094
2009	21,205	13,912	0.155	0.325	0.181	1,283
2010	22,841	14,784	0.111	0.338	0.228	1,511
2011	27,439	15,355	0.116	0.391	0.278	1,569
2012	26,250	14,746	0.126	0.393	0.271	1,830
2013	29,369	16,849	0.149	0.374	0.237	1,664
2014	31,291	17,771	0.133	0.375	0.255	1,578
Average annual growth	0.078	0.070				

	Real per capita income	Real per capita consumption	Remittances as % of income	Saving rate	Saving rate excluding remittances	No. of observations
Without insurance:						
2008	15,532	9,474	0.142	0.365	0.219	3,637
2009	17,939	11,568	0.147	0.332	0.196	3,698
2010	20,104	12,970	0.093	0.333	0.242	3,615
2011	22,413	12,340	0.088	0.382	0.299	3,398
2012	23,264	13,294	0.097	0.368	0.274	3,092
2013	26,341	14,979	0.125	0.358	0.247	2,668
2014	27,640	15,696	0.109	0.353	0.256	2,645
Average annual growth	0.086	0.075				

Source: RUMIC survey, 2008–14.

We first compare households with and without members left behind. Of the three groups, single households have had the most income growth, averaging 11 per cent annually. This rate for married households without and with members left behind is 8 per cent and 10 per cent, respectively. In terms of per capita income level, the married household heads without members left behind are also the ones with the lowest real per capita income. However, this is probably an artefact of the households without members left behind having, on average, 3.2 members living in cities, while this number for single households is 1.1 and for households with members left behind it is 1.6 people. Real per capita income should be lower for this group.

The second column of the table presents real per capita consumption and its annual growth rate at the bottom row. It shows that for singles and households without members left behind, their annual growth in consumption is only slightly (no more than 1.2 percentage points) lower than their income annual growth rate, suggesting a high consumption share and low savings for these two groups. For households with members left behind, however, their consumption growth rate is 2 percentage points below their average income growth rate. In fact, the share of consumption as a proportion of income for the other two groups was about 60 per cent in 2014; for households with members left behind, it was only 50 per cent—10 percentage points lower.

Going across to Column 3, we also observe that the proportion of income remitted is more than 10 percentage points higher among households with members left behind than for the other two types of households. Even the single households remit more than households without members left behind. Finally, columns 4 and 5 present the saving rates with and without remittances. Once again, households with members left behind save the most, and single households have a lower saving rate than them, but higher savings than households without members left behind. In the early years, households with members left behind sent almost 60 per cent of their savings home as remittances, but this has gradually reduced to 40–45 per cent. For singles, about one-third of their savings goes to remittances, whereas remittances account for only about 15 per cent of savings for households without members left behind.

Turning to panels D and E of Table 8.2, we observe very limited differences in income and consumption growth. However, households without insurance have a much larger increase in the saving rate excluding remittances than households with insurance, indicating a greater need to save in the city in recent years.

Household characteristics

We also present summary statistics for household characteristics that may be related to household consumption and saving behaviours. The top panel of Table 8.3 presents the characteristics for the total sample and the second panel reports the same variables for the new-household sample. The table shows that, in 2008, migrant household heads were about 30 years of age and, over time, there has been a gradual increase in the average age. About 60–69 per cent of household heads are male. In the early years, there were more single people in the sample than there are now. In 2014, for example, about 72 per cent of household heads were married (including cohabitation). This may be due to the fact that our total sample includes a large proportion of the panel households and married people are more likely to stay longer in cities. When we examine the average of the new sample, we find that the proportion of household heads who are married has also increased, but not to the extent suggested by the total sample.

The majority of heads of migrant households have education to junior high school level or below. There is some increase in the proportion of household heads who are self-employed—from 19 per cent in 2008 to 31 per cent in 2014. However, this phenomenon is confined mainly to the ‘old-household’ sample. For the new-household sample, the proportion increased only slightly—to 22 per cent in 2014. Perhaps those who are self-employed are more likely to stay in the city longer and are therefore more likely to be tracked. The variable ‘number of years since first migrating’ is based on the information migrants provided on the year when they first migrated. This may be an exaggeration of their actual years of migration due to the frequent churn of Chinese migrants between cities and their home village, but it is the best information we can find. Based on this information provided from the new-household sample, over time, the length of stay in cities seems to be increasing from 7–8 to 9–10 years.

The average size of migrant households in the city has also increased, from 1.7 to two people, confirming that more family migration is occurring now than in the past. More importantly, from our data, it seems that there has been a reduction in the proportion of households who leave their children or spouse behind. Based on the new-household sample data, in 2008, only 38 per cent of families with children brought their children with them when they migrated. This had increased to 52 per cent by 2014. Similarly, the proportion of married migrants who left their spouse behind has reduced—from about 40 per cent to about 30 per cent.

Table 8.3 Summary statistics of household characteristics

Total sample	2008	2009	2010	2011	2012	2013	2014
HH head age	30.45	31.28	31.5	32.16	33.43	34.74	35.97
HH head is male	0.69	0.67	0.66	0.62	0.62	0.63	0.62
HH head is married	0.54	0.56	0.56	0.60	0.64	0.67	0.72
HH head has junior high school or below education	0.66	0.63	0.61	0.63	0.64	0.63	0.65
HH head is self-employed	0.19	0.22	0.22	0.24	0.26	0.29	0.31
HH no. of years since first migrating	7.75	8.37	8.16	9.25	10.52	11.27	12.33
Family size	1.67	1.73	1.77	1.88	1.97	2.06	2.19
Total no. of migrant children for HH with children	0.49	0.59	0.58	0.68	0.71	0.76	0.79
Total no. of children left behind for HH with children	0.80	0.72	0.64	0.63	0.62	0.58	0.57
Total no. of children for HH with children	1.29	1.31	1.22	1.31	1.33	1.34	1.35
Proportion of spouses left behind if married	0.35	0.33	0.32	0.30	0.27	0.26	0.23
HH head with pension insurance	0.20	0.22	0.24	0.27	0.33	0.35	0.34
HH head with health insurance	0.12	0.15	0.25	0.23	0.30	0.34	0.33
2008 or new sample:							
HH head age	30.45	30.52	30.27	30.24	31.42	32.62	34.39
HH head is male	0.69	0.65	0.64	0.61	0.61	0.62	0.6
HH head is married	0.54	0.51	0.48	0.48	0.55	0.58	0.63
HH head has junior high school or below education	0.66	0.62	0.59	0.63	0.62	0.60	0.64
HH head is self-employed	0.19	0.18	0.16	0.17	0.17	0.21	0.22
HH no. of years since first migrating	7.75	7.70	6.50	7.68	8.8	9.03	10.33
Family size	1.67	1.58	1.54	1.60	1.73	1.70	1.89
Total no. of migrant children for HH with children	0.49	0.50	0.41	0.53	0.54	0.54	0.65
Total no. of children left behind for HH with children	0.80	0.79	0.69	0.77	0.8	0.79	0.71
Total no. of children for HH with children	1.29	1.3	1.1	1.29	1.34	1.32	1.36
Proportion of spouses left behind if married	0.35	0.40	0.40	0.39	0.34	0.38	0.29
HH head with pension insurance	0.20	0.21	0.19	0.25	0.35	0.30	0.29
HH head with health insurance	0.12	0.15	0.22	0.19	0.34	0.30	0.29

HH = household

Source: RUMiC survey, 2008–14.

Finally, in terms of social insurance coverage, there has been a steady improvement among migrants; however, the speed of this improvement is slow. For example, at the beginning of the survey period, about 20 per cent of household heads had pension insurance, either provided by their employer or purchased by the household head. This increased to about 30 per cent in 2014. The high-income households had much more success in this area than their low-income counterparts, which could be related to the fact that a significantly larger proportion of the low-income group is self-employed. But, by any account, the figures presented in our new-household sample (the current representative sample) suggest that the access rate for the top income group is about 35 per cent, which is still very low.

All these household characteristics should have an important influence on migrants' consumption and saving behaviour.

Understanding migrant consumption and saving

In this section, we examine what factors influence migrant household consumption and saving behaviour. We estimate Equation 8.3.

Equation 8.3

$$Y_{ijt} = \alpha + f(\ln(\text{inc})_{ijt}) + \delta X_{ijt} + \gamma W_{ijt} + c_{jt} + \epsilon_{ijt}$$

In this equation, subscripts i , j and t refer to household, city and year, respectively; Y is a vector of dependent variables in which we are interested, including log of real per capita consumption and saving rate; $\ln(\text{inc})$ is log real per capita income; X is household characteristics related to permanent income, such as household heads' education level, age and its squared term, gender of the household head and whether or not the head is self-employed. Because the purpose of this chapter is to understand how institutional restrictions on migration affect migrant household consumption behaviour, we do not pay too much attention to separately identifying permanent and transitory incomes, but simply control for some determinants of permanent income. W is a vector of variables, which proxies the impact of the current institutional restrictions on migrant households, including whether the household head is married or single, family size, the total number of children the household has, and the number of children left behind, whether or not the spouse of the household head is left behind, and two dummy variables indicating whether the household head has pension or health insurance. C is a vector of city*year fixed effects, which should control for all the year–city varying fixed factors that could affect

individuals' spending, such as the price effect, which is not fully captured by the provincial-level CPI. Finally, ϵ_{ijt} is the household random error term. Our main interest is to examine the impact of institutional restrictions on household consumption and saving behaviour (y). The $f(\cdot)$ allows a nonlinear relationship between income and the outcome variables. Equation 8.3 is first estimated using the parametric functional form, where we observe a mean relationship between $\ln(\text{inc})$ and the outcome variable, because the main purpose here is to examine the coefficients on other variables, in particular γ s. Later in the chapter, we also estimate the semiparametric function of Equation 8.3 to examine the potential nonlinear relationship between income and outcome variables using the Yatchew (1997, 1998) method.

Main results

Table 8.4 presents the results from parametric estimation of Equation 8.3. Panels A and B report results using the total sample and the new-household sample, respectively. The two dependent variables used are log real per capita consumption and the saving rate. The results from the two samples are largely consistent. The discussion below focuses on the total sample results unless there is a significant difference in the results.

Table 8.4 Regression results: Consumption and saving

Variables	Panel A: Total sample			Panel B: 2008 and new-household sample		
	Log real per capita consumption	Log consumption excluding insurance	Saving rate	Log real per capita consumption	Log consumption excluding insurance	Saving rate
Log(real per capita income)	0.608*** [0.006]	0.605*** [0.006]	0.252*** [0.004]	0.679*** [0.008]	0.677*** [0.008]	0.209*** [0.005]
HH head age	-0.000 [0.002]	-0.001 [0.002]	0.000 [0.001]	0.000 [0.002]	0.000 [0.002]	-0.001 [0.001]
HH head age squared	-0.000** [0.000]	-0.000** [0.000]	0.000** [0.000]	-0.000** [0.000]	-0.000** [0.000]	0.000** [0.000]
HH head is male	-0.036*** [0.005]	-0.035*** [0.005]	0.019*** [0.003]	-0.025*** [0.006]	-0.024*** [0.006]	0.014*** [0.004]
HH head years of schooling	0.012*** [0.001]	0.012*** [0.001]	-0.008*** [0.001]	0.011*** [0.001]	0.011*** [0.001]	-0.006*** [0.001]
HH head is self-employed	0.186*** [0.006]	0.182*** [0.006]	-0.113*** [0.004]	0.176*** [0.009]	0.174*** [0.009]	-0.108*** [0.006]
HH head years since first migrating	0.005*** [0.001]	0.005*** [0.001]	-0.003*** [0.001]	0.006*** [0.001]	0.006*** [0.001]	-0.004*** [0.001]
HH head years since first migrating squared	-0.000** [0.000]	-0.000** [0.000]	0.000** [0.000]	-0.000* [0.000]	-0.000* [0.000]	0.000** [0.000]
Household size	-0.052*** [0.004]	-0.053*** [0.004]	0.035*** [0.003]	-0.025*** [0.006]	-0.027*** [0.006]	0.018*** [0.004]
HH head is married	-0.069*** [0.009]	-0.069*** [0.009]	0.029*** [0.005]	-0.071*** [0.012]	-0.071*** [0.012]	0.031*** [0.007]

Variables	Panel A: Total sample			Panel B: 2008 and new-household sample		
	Log real per capita consumption	Log consumption excluding insurance	Saving rate	Log real per capita consumption	Log consumption excluding insurance	Saving rate
Total number of children	0.056*** [0.006]	0.055*** [0.006]	−0.038*** [0.004]	0.054*** [0.009]	0.055*** [0.009]	−0.038*** [0.006]
Total no. of children left behind	−0.106*** [0.006]	−0.106*** [0.006]	0.064*** [0.004]	−0.100*** [0.010]	−0.102*** [0.010]	0.062*** [0.006]
Dummy for spouse left behind	−0.053*** [0.009]	−0.053*** [0.009]	0.018*** [0.005]	−0.053*** [0.012]	−0.054*** [0.012]	0.019** [0.007]
HH head with pension insurance	0.023*** [0.007]	0.017** [0.007]	−0.011*** [0.004]	0.024** [0.009]	0.020** [0.009]	−0.012** [0.006]
HH head with health insurance	0.052*** [0.007]	0.041*** [0.007]	−0.030*** [0.005]	0.049*** [0.010]	0.043*** [0.010]	−0.027*** [0.006]
Dummy for new-HH sample	0.000 [0.005]	0.002 [0.005]	0.000 [0.003]			
City-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,282	33,282	33,282	17,526	17,526	17,526
R-squared	0.483	0.478	0.236	0.502	0.500	0.209

HH = household

*** p < 0.01

** p < 0.05

* p < 0.1

Notes: The dummies indicating the missing entries in years since first migrating and self-employment are included in the regressions. Robust standard errors are in parentheses. RUMIC survey, 2008–14, waves are used.

On average, the income elasticity of consumption is about 0.61–0.68. The income elasticity of saving is about 0.21–0.25, controlling for the vector of permanent income-related variables (X). We also tried to estimate two-step regression using X to predict permanent income and taking the residual as the transitory component of income; the coefficient obtained for the permanent component of income is about 0.91, while the coefficient on the residual component is 0.58, which is roughly the same as what is observed here. Note that, in general, migrants are a very low-paid group, and consuming a large proportion of transitory income could be seen as rational behaviour.

The age of the household head has an inverted-U shaped relationship with consumption, while education and self-employment are positively correlated with consumption (and opposite to saving). Male-headed households consume less and save more.

The years since first migrating also have an inverted-U shaped relationship with consumption, but the turning point does not occur until migrants stay in the city for 36 years (see Figure 8.7). Thus, the longer the migrants stay in the city, the more their consumption level increases in the first 36 years of their working life. This probably is an assimilation process in terms of their consumption behaviour. Recall that due to institutional restrictions on family migration, Chinese internal migrants are less likely to stay long in cities. Based on our data, the median years of migration currently stands at eight, while the mean years of migration is about 11; both are way below the point at which migrants' consumption level starts to taper. From this point of view, the institutional restrictions on migration limited migrants' city consumption. Given the large number of migrants working in cities and the significant difference between individuals' consumption in city and rural areas (see Figures 8.1 and 8.2), the aggregated effect on reduction in consumption from shortened duration of migration should be significant.

Household size has a negative relationship with per capita consumption, perhaps because larger families need to spend less per capita on 'public goods' within the family. Controlling for household size, married household heads relative to those who are single are spending less regardless of whether or not their spouse is living within the household. Perhaps married households have more to take care of and are more concerned about their future. Households with more children consume more, but, controlling for the total number of children, households with children left behind are consuming less and saving more. For every additional child left behind, migrant households in the city will reduce their per capita consumption by 5 per cent (10.6 per cent – 5.6 per cent). Similarly, for migrants who are married and have left their spouse behind, their household per capita

consumption will be reduced by 12.2 per cent (6.9 per cent + 5.3 per cent). These are very large effects, indicating the impact of the family migration restrictions on migrant household consumption and saving behaviour.

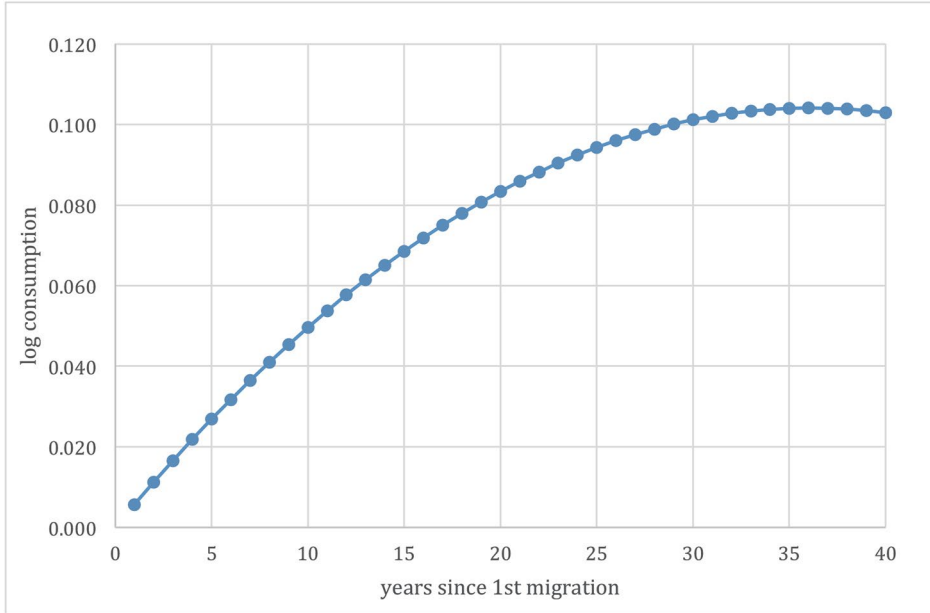


Figure 8.7 Migration duration and consumption

Source: Authors' own estimation based on results presented in Table 8.4.

Finally, whether or not the migrant household head has pension or health insurance is also related to their consumption pattern. One concern is that some insurance payments are included in the measure of consumption and therefore the idea that those who have insurance spend more is only an artefact of the data. To test this, we calculated the per capita consumption excluding insurance payments and reran the regression (the second column in each panel), and the results are largely consistent. This seems to suggest that individuals with social insurance have less to worry about and hence are willing to spend more. In other words, those without social insurance are saving more due to the precautionary motive. Indeed, if a household head does not have health or pension insurance, the family's per capita consumption reduces by 6–8 per cent.

We also estimated Equation 8.3 using the semiparametric method to examine whether the marginal propensity to consume (save) is similar for the high- and low-income groups, controlling for all the permanent income-related variables, institutional related variables as well as city-year fixed effects. The results are shown in Figure 8.8. The general pattern of the consumption and income relationship presented in Panel A of Figure 8.8 seems to be consistent with that

revealed from the unconditional relationship presented in Figure 8.3: over time, the relationship between income and consumption becomes flatter, due mainly to the low-income group spending less and saving more than in the early period.

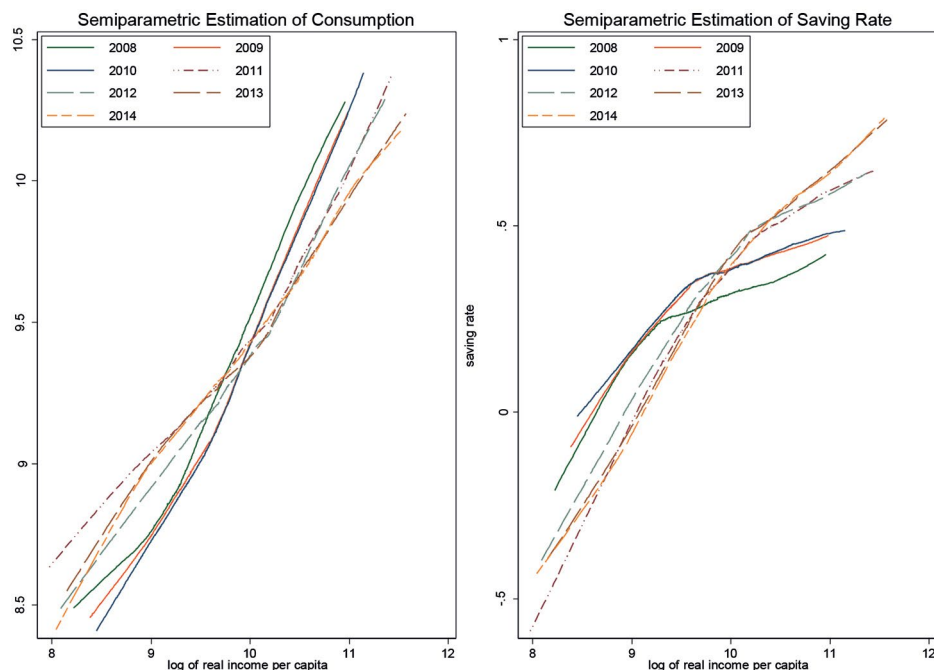


Figure 8.8 Semiparametric relationship between income and consumption and saving

Source: Authors' own estimation.

Finally, we estimate the log real per capita consumption and saving rate equations for the top and bottom 20 percentile households separately (see Table 8.5). We find that among the low-income group, the income effect on consumption is flatter than among the high-income group: a 10 per cent increase in income increases the low-income group's consumption by 4.7 per cent, while the rate is 6.9 per cent for the high-income group. Naturally, when compared with the saving rate, the income effect is reversed: higher for the low-income group and lower for the high-income group. The marginal propensity to save among low-income households is 0.44, while for the high-income group it is 0.14. These results coincide well with the unconditional relationship presented in Figure 8.3, where we see that the income elasticity to saving curve becomes flatter for the high-income group. Moving to the important variables that proxy for institutional restrictions, we find that the results are very similar to those found in the total sample estimation. The additional information we find here is that the impact of children left behind is slightly larger among the high-income group than among the low-income group. Regarding social insurance

coverage, the effect is almost the same for the two groups; however, because social insurance coverage for the low-income group is almost half that for the high-income group, policy to improve social insurance coverage at the lower end of income distribution among migrants may be more effective in increasing the level of migrants' city consumption. Note that we include only two variables to indicate social insurance coverage; the unmeasured social insurance coverage could be the reason for the higher saving propensity among the poor than among the high-income group.⁴

Table 8.5 Consumption and saving: Top and bottom income groups

	Log(per capita real consumption)		Saving rate	
	Lowest income	Highest income	Lowest income	Highest income
Log(real per capita income)	0.474*** [0.016]	0.688*** [0.024]	0.443*** [0.014]	0.140*** [0.012]
HH head age	0.002 [0.003]	−0.004 [0.005]	−0.000 [0.002]	0.003 [0.003]
HH head age squared	−0.000 [0.000]	−0.000 [0.000]	0.000 [0.000]	−0.000 [0.000]
HH head is male	−0.017* [0.009]	−0.075*** [0.012]	0.016** [0.007]	0.038*** [0.006]
HH head years of schooling	0.008*** [0.002]	0.014*** [0.002]	−0.007*** [0.001]	−0.007*** [0.001]
HH head is self-employed	0.126*** [0.010]	0.201*** [0.015]	−0.098*** [0.008]	−0.095*** [0.008]
HH head years since first migrating	0.004* [0.002]	0.004 [0.003]	−0.003* [0.002]	−0.002 [0.001]
HH head years since first migrating squared	−0.000 [0.000]	−0.000 [0.000]	0.000 [0.000]	0.000 [0.000]
Household size	−0.042*** [0.006]	−0.122*** [0.013]	0.038*** [0.005]	0.058*** [0.006]
HH head is married	−0.063*** [0.023]	−0.072*** [0.018]	0.024 [0.017]	0.035*** [0.009]

⁴ Often such insurance is highly correlated; including them separately generates a strong multicollinearity problem.

	Log(per capita real consumption)		Saving rate	
	Lowest income	Highest income	Lowest income	Highest income
Total number of children	0.033*** [0.008]	0.047** [0.020]	−0.025*** [0.007]	−0.022** [0.010]
Total no. of children left behind	−0.086*** [0.011]	−0.098*** [0.019]	0.064*** [0.009]	0.045*** [0.010]
Dummy for spouse left behind	−0.089*** [0.020]	−0.090*** [0.022]	0.040*** [0.015]	0.037*** [0.011]
HH head with pension insurance	0.014 [0.015]	0.007 [0.015]	−0.010 [0.012]	−0.002 [0.008]
HH head with health insurance	0.043*** [0.016]	0.046*** [0.016]	−0.024* [0.013]	−0.022*** [0.008]
Dummy for new-HH sample	0.041*** [0.011]	0.003 [0.012]	−0.026*** [0.008]	0.000 [0.006]
City–year fixed effects	Yes	Yes	Yes	Yes
Observations	6,705	6,478	6,705	6,478
R-squared	0.398	0.304	0.254	0.216

HH = household

*** $p < 0.01$

** $p < 0.05$

* $p < 0.1$

Notes: The dummies indicating the missing entries in years since first migrating and self-employment are included in the regressions. Robust standard errors are in parentheses. RUMiC migrant, 2008–14, waves are used.

To sum up, we find that there are many channels through which institutional restrictions on migration exert a negative impact on migrants' city consumption. These channels include shortened duration of migration, children and other family members left behind due to the lack of social services provision in cities for migrants and their families, as well as precautionary saving generated by lack of social welfare coverage.

Saving and remittances

The above analyses are based on migrants' city consumption, and savings include remittances. Although migrants spent less than they would have in cities had they been treated more equally with their city counterparts, part of their 'savings'—that is, remittances—is spent in rural areas. Hence, this type of reduction in consumption may not necessarily reduce aggregated domestic

demand. For example, the reason migrants with children left behind are spending less themselves in cities is because they need to send more remittances to their children back home, which will eventually be spent in rural areas.

Here, we would like to mention three points. First, as shown in Figures 8.1 and 8.2, on average, individuals spend more in the city than in rural areas. Thus, had the family members left behind been brought to cities, the spending would be greater. Second, Zhu et al. (2012) used data from about 1,500 households in two rural provinces to show that the marginal propensity to save out of remittances using ordinary least squares (OLS) regression is over 0.9, and, even with IV, it still stands at 0.3–0.6, which is high.⁵ Third, whether or not the institutional restrictions on migration affected only migrant spending in cities because of increased remittances rather than a general change in consumption and saving patterns is an empirical question. To understand this issue a little better, we examine saving patterns by subcategories of savings, including investment, remittances, residual savings (increments in deposits and cash savings) and total saving excluding remittances. The first two items plus other non-consumption expenditure add up to the total non-consumption expenditure. The residual saving is obtained by subtracting consumption expenditure and non-consumption expenditure from income.

Because many households do not have all the subitems of the non-consumption expenditure and many have negative saving components, these variables have a large number of zero or negative values. We first examine the distribution of these variables to determine how they should be estimated. Among our total sample of migrants over seven years, only 12 per cent of observations had any investment savings. We therefore estimate a linear probability model, which examines what household characteristics are associated with having any investment savings (the dependent variable is a dummy that takes the value of one if the observation has any investment savings and zero otherwise). For the remittances variable, about 40 per cent of observations have negative or zero values, whereas for deposits and cash-in-hand, 22 per cent of observations have negative values. For these variables, the econometric literature generally resolves the problem of skewed distribution by taking inverse hyperbolic sine transformations of the variable to make them less skewed before estimating the regression using OLS (for example, Carroll et al. 2003; Cobb-Clark and Hildebrand 2006; Meng 2007). Thus, when using remittances and deposits–cash as dependent variables, Equation 8.3 may be written as Equation 8.4.

⁵ The validity of the IV and the estimation strategy used in their study, though, are debatable.

Equation 8.4

$$g(Y_{ijt}) = \alpha + \beta \ln(inc)_{ijt} + \delta X_{ijt} + \gamma W_{ijt} + \epsilon_{ijt} + \epsilon_{ijt}$$

The inverse hyperbolic sine transformation is defined as Equation 8.5.

Equation 8.5

$$g(Y_{ijt}) = \sinh^{-1}(\theta Y_{ijt})/\theta = \ln[\theta Y_{ijt} + (\theta^2 Y_{ijt}^2 + 1)^{\frac{1}{2}}]/\theta$$

In this equation, θ is a damping parameter.⁶ To interpret the results, the marginal effect for each variable is calculated and the calculation is based on a formula. For example, to calculate the marginal effect of X on Y , we need to calculate $Y/\partial X = \beta[(\theta Y)^2 + 1]^{1/2}$ where the first term is the estimated coefficient and the second term is $\partial Y/\partial g(Y_{ijt})$.

The estimated results for investment, remittances, the residual saving rate and the saving rate excluding remittances are reported in Table 8.6. Column 1 presents the probability of the household having any investments. We find that every 1 per cent increase in income increases the probability of investing by 0.074 per cent, whereas a household head who is self-employed has a 14.5 per cent higher probability relative to his wage/salary-earning counterparts to invest, which is the largest impact in the investment equation. Having a child or a spouse left behind reduces the investment probability, but only the coefficient for children left behind is precisely estimated. Households whose heads are covered by pension and/or health insurance are more likely to invest than household heads who are not covered.

Table 8.6 Regression results from subitems of savings

	Investment coefficient	Remittance Coefficient ME at mean		Residual saving rate Coefficient ME at mean		Saving rate excluding remittance coefficient
	(1)	(2)	(3)	(4)	(5)	(6)
Log(real per capita income)	0.074*** [0.005]	479.273***	1394.89 [13.784]	0.236***	0.241 [0.005]	0.263*** [0.005]
HH head age	0.002* [0.001]	9.599*	27.94 [4.924]	-0.003**	-0.003 [0.001]	-0.002* [0.001]
HH head age squared	-0.000 [0.000]	-0.131**	-0.38 [0.065]	0.000***	0.000 [0.000]	0.000*** [0.000]

⁶ In this study, we take $\theta = 0.001$ for remittances and $\theta = 1.2$ for the residual saving rate to make the residuals close to normal distribution.

	Investment coefficient	Remittance Coefficient ME at mean		Residual saving rate Coefficient ME at mean		Saving rate excluding remittance coefficient
	(1)	(2)	(3)	(4)	(5)	(6)
HH head is male	−0.003 [0.004]	84.378***	245.58 [11.469]	0.004	0.004 [0.004]	0.005 [0.003]
HH head years of schooling	0.002** [0.001]	−4.506**	−13.12 [2.027]	−0.008***	−0.008 [0.001]	−0.008*** [0.001]
HH head is self-employed	0.145*** [0.006]	−116.289***	−338.45 [14.384]	−0.132***	−0.135 [0.005]	−0.097*** [0.005]
HH head years since first migrating	0.001 [0.001]	12.510***	36.41 [3.273]	−0.005***	−0.005 [0.001]	−0.005*** [0.001]
HH head years since first migrating squared	−0.000 [0.000]	−0.299***	−0.87 [0.108]	0.000***	0.000 [0.000]	0.000*** [0.000]
Household size	0.030*** [0.004]	−166.214***	−483.75 [8.121]	0.051***	0.052 [0.004]	0.061*** [0.003]
HH head is married	0.006 [0.006]	295.939***	861.31 [22.809]	−0.031***	−0.032 [0.006]	−0.025*** [0.006]
Total number of children	0.009* [0.005]	81.176***	236.26 [12.701]	−0.052***	−0.053 [0.005]	−0.048*** [0.005]
Total no. of children left behind	−0.011* [0.006]	374.706***	1090.55 [14.897]	0.011**	0.011 [0.005]	0.004 [0.005]
Dummy for spouse left behind	−0.010 [0.007]	273.430***	795.80 [20.576]	−0.053***	−0.055 [0.007]	−0.050*** [0.006]
HH head with pension insurance	0.012** [0.006]	20.011	58.24 [18.075]	−0.020***	−0.020 [0.006]	−0.010** [0.005]
HH head with health insurance	0.034*** [0.006]	−27.625	−80.40 [19.199]	−0.029***	−0.030 [0.006]	−0.026*** [0.005]
Dummy for new-HH sample	−0.023*** [0.004]	−106.793***	−310.81 [13.641]	0.030***	0.031 [0.004]	0.022*** [0.004]
City–year fixed effects	Yes	Yes		Yes		Yes
Observations	33,282	33,282		33,282		33,282
R-squared	0.110	0.279		0.167		0.170

HH = household

*** p < 0.01

** p < 0.05

* p < 0.1

Notes: The dummies indicating the missing entries in years since first migrating and self-employment are included in the regressions. Robust standard errors are in parentheses. RUMiC survey, 2008–14, waves are used.

The results of the remittances equation (coefficients presented in Column 2 and the marginal effect in Column 3) show that every 1 per cent increase in income increases remittances by RMB14. The largest impact on remittances is related to family composition. First, married migrants remit RMB861 more than those who are single. Second, for those who are married and have children, every additional child will increase their remittances by RMB236. On top of this, migrants with children left behind send the most money back home: one additional child left behind increases remittances by RMB1,091. Furthermore, a household head with a spouse left behind sends home RMB796 more than a married migrant whose spouse is in the city with her/him. Intuitively, if a married migrant has a child and a spouse left behind, he would remit $\text{RMB}2,984 = 861 + 236 + 1,091 + 796$ more back home than his single counterparts. This is a very large amount—almost 1.1 times average real per capita remittances for the whole sample and, over the eight years, 86 per cent of the 2014 average per capita remittances. Contrary to the positive effect on remittances of family members being left behind, if a migrant has a larger family in the city, one additional city family member reduces remittances by RMB484. Self-employed people are less likely to send remittances home and perhaps this is due to their city investment needs (see the result on the investment equation).

Columns 4 and 5 of Table 8.6 report the coefficients and marginal effects evaluated at the mean value from the residual saving rate $((\text{income} - \text{cons} - \text{nconsexp})/\text{income})$ equation. The average residual saving rate over the seven years is about 19 per cent. Most independent variables, except the gender of the household head, are statistically significantly correlated with the residual saving rate and most signs are reasonable. In particular, age has a U-shaped relationship and education is negatively associated with the residual saving rate. Those who are self-employed put more money into investments but less into residual savings (deposits or cash-in-hand). Households with social insurance are putting less money in residual savings and remittances, but are more likely to invest. Taking the residual saving rate, for example, the results suggest that if the household head does not have pension or health insurance, he/she would save 4.9 percentage points more in deposits and cash savings, which accounts for 26 per cent of the average residual saving rate. Note that the majority of these are related to health insurance. It makes sense that households without insurance would put more money into deposits and cash. Without health insurance, one would need to put money aside in case of bad luck. The results on family composition suggest that marriage status, number of children and the dummy for a spouse left behind are all negatively related with residual saving; most of these migrants' money went into remittances. However, having children left behind is positively associated with the residual saving rate, although the magnitude is small. An additional child being left behind increases the residual saving rate by 1 percentage point, which is about 5 per cent of the average residual saving rate. It is not clear why

migrants would put more money aside when they have children left behind; perhaps this is used in preparation for the children eventually coming to the city to join them. Whatever the reasons, migrant households with children left behind are saving more than others. In the RUMiC survey for 2013 and 2014, we asked migrants to rank the type of social services they thought were the most important condition for them to stay in the city permanently. About 36 per cent (the largest proportion) ranked childcare and children's education as the most important among the eight types of services listed, suggesting the importance of children's education to migrants.

Finally, in Column 6, we present the results for the saving rate excluding remittances. The results are very similar to those obtained from the residual saving regression.

Thus, in general, it is true that households with family members left behind are mostly sending their money back to rural villages. Although Zhu et al. (2012) suggest a high saving rate from remittances, testing whether this is the case for our sample is beyond our ability and the scope of this chapter. What we can say, based on our results so far, is that for migrants with family members left behind, and conditional on them spending less and saving more, they also substitute within saving items, such as reducing the probability to invest. It is also interesting to see that families with children left behind are putting more money aside. More importantly, the lack of social insurance coverage among migrants also reduces investment and increases cash savings.

Conclusion

China's future development will rely heavily on domestic demand, which, in turn, relies heavily on the urbanisation process. To a large extent, however, China's existing institutional setting, which restricts permanent settlement of rural–urban migrants, could be detrimental to its smooth transition from an export-oriented to a domestic demand-driven economic growth path.

In this chapter, we use seven years of RUMiC survey data to demonstrate how these institutional restrictions directly curbed the consumption of 166 million migrant workers. In particular, migrants with family members left behind are consuming considerably less in cities than their counterparts who brought their family members with them to the city. More importantly, migrants without social insurance are the major precautionary savers. Consider that even in 2014 less than 35 per cent of household heads were covered by either health or pension insurance. Resolving the problem of social insurance coverage for migrant workers could contribute significantly to an increase in domestic demand.

Among migrant workers, it is the low-income group that has very low levels of social insurance coverage. In 2014, the social insurance coverage level for households in the bottom 20 income percentile was half that for the top 20 income percentile households. We also find the saving propensity is much higher among the poor than among the top income group. It could therefore be the case that precautionary saving among the poor is higher. Consequently, promoting social insurance among the poor should have a significant impact on consumption.

References

- Cai, F., Giles, J., O'Keefe, P. and Wang, D. (2012), *The elderly and old age support in rural China*, Washington, DC: The World Bank.
- Carroll, C. D., Dynan, K. E. and Krane, S. D. (2003), Unemployment risk and precautionary wealth: Evidence from households' balance sheets, *Review of Economics and Statistics*, 85(3): 586–604.
- Chamon, M., Liu, K. and Prasad, E. (2013), Income uncertainty and household savings in China, *Journal of Development Economics*, 105: 164–177.
- Chen, Y. and Feng, S. (2013), Access to public schools and the education of migrant children in China, *China Economic Review*, 26: 75–88.
- Choi, H., Lugauer, S. and Mark, N. C. (2014), *Precautionary saving of Chinese and US households*, NBER Working Paper 20527, September, Cambridge, Mass.: National Bureau of Economic Research.
- Cobb-Clark, D. A. and Hildebrand, V. A. (2006), The wealth and asset holdings of US-born and foreign-born households: Evidence from SIPP data, *Review of Income and Wealth*, 52(1): 17–42.
- Du, Y., Gregory, R. and Meng, X. (2006), The impact of the guest-worker system on poverty and the wellbeing of migrant workers in urban China, in R. Garnaut and L. Song (eds), *The turning point in China's economic development*, Canberra: ANU E Press.
- Gong, X., Kong, S., Li S. and Meng, X. (2008), Rural–urban migrants: A driving force for growth, in L. Song and W. Woo (eds), *China's Dilemma*, Canberra: ANU E Press.
- Meng, X. (2003), Unemployment, consumption smoothing, and precautionary saving in urban China, *Journal of Comparative Economics*, 31(3): 465–485.

- Meng, X. (2007), Wealth accumulation and distribution in urban China, *Economic Development and Cultural Change*, 55(4): 761–791.
- Meng, X. (2013), Rural–urban migration: Trend and policy implications (2008–2012), in R. Garnaut, F. Cai and L. Song (eds), *China: A new model for growth and development*, Canberra: ANU E Press.
- National Bureau of Statistics (various years), ‘Consumer Price Indices’, Beijing: China Statistics Press. Available from: data.stats.gov.cn/easyquery.htm?cn=C01.
- Wei, S.-J. and Zhang, X. (2011), The competitive saving motive: Evidence from rising sex ratios and savings rates in China, *Journal of Political Economy*, 119(3): 511–564.
- Yatchew, A. (1997), An elementary estimator of the partial linear model, *Economics Letters*, 57(2): 135–143.
- Yatchew, A. (1998), Nonparametric regression techniques in economics, *Journal of Economic Literature*, 36(2): 669–721.
- Zhu, Y., Wu, Z., Wang, M., Du, Y. and Cai, F. (2012), Do migrants really save more? Understanding the impact of remittances on savings in rural China, *The Journal of Development Studies*, 48(5): 654–672.

Appendix 8.1

Table A8.1 Household income and expenditure: New sample

2008 or new sample	Real per capita income	Real per capita consumption	Real per capita non-consumption	Real per capita remittances	Saving rate	Saving rate excluding remittances	No. of observations
2008	16,225.42	9,837.508	3,411.86	2,266.32	0.37	0.22	4,731
2009	19,000.90	12,183.36	3,669.57	2,675.58	0.34	0.21	3,268
2010	21,619.83	14,184.54	2879.3	2,021.38	0.32	0.23	2,732
2011	24,531.56	13,362.47	3,375.64	2,294.48	0.39	0.30	2,144
2012	25,050.38	13,787.52	3,056.88	2,195.42	0.39	0.31	1,742
2013	28,943.50	16,388.13	5,353.05	4,147.01	0.37	0.24	1,453
2014	29,726.80	16,278.42	4,593.63	3,769.61	0.38	0.27	1,456
Average annual growth	0.090	0.075	0.043	0.075			
Top 20% income group:							
2008	29,218.17	16,533.60	5,476.37	3,675.41	0.43	0.30	
2009	32,531.97	20,227.77	7,564.03	5,356.82	0.37	0.21	
2010	37,387.77	24,048.33	4,646.83	3,208.73	0.35	0.26	
2011	42,070.16	19,361.46	6,045.42	3,995.87	0.53	0.43	
2012	41,974.11	19,524.46	4,419.41	3,276.06	0.52	0.44	
2013	48,222.10	22,274.89	1,1031.6	8,482.42	0.53	0.35	
2014	50,506.49	22,122.55	8,694.94	7,476.69	0.55	0.40	
Average annual growth	0.081	0.042	0.068	0.107			

2008 or new sample	Real per capita income	Real per capita consumption	Real per capita non-consumption	Real per capita remittances	Saving rate	Saving rate excluding remittances	No. of observations
Bottom 20% income group:							
2008	7,846.04	5,595.98	2,075.09	1,104.80	0.26	0.13	
2009	9,397.13	6,909.44	1,242.66	851.379	0.25	0.16	
2010	9,894.18	7,644.64	1,251.12	823.272	0.21	0.13	
2011	10,458.27	8,930.17	1,417.30	703.143	0.10	0.03	
2012	11,241.73	9,516.81	1,787.61	727.825	0.12	0.05	
2013	12,140.89	11,416.75	1,550.31	998.772	0.03	−0.04	
2014	12,564.55	10,458.46	1,322.49	745.757	0.14	0.08	
Average annual growth	0.07	0.09	−0.06	−0.05			

Source: RUMiC survey, 2008–14.

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