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Urbanisation and household consumption in China

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Thomas Chalaux,
Qiang Ren**

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By Margit Molnar, Thomas Chalaux and Qiang Ren

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ABSTRACT/RESUMÉ**Urbanisation and Household Consumption in China**

This paper focusses on the link between urbanisation and consumption behaviour in China. Urbanisation is defined here as rural people moving to cities to work and migrant workers in cities obtaining urban residential status, against the backdrop of government plans to settle 100 million rural dwellers into cities and grant urban residential status to another 100 million migrant workers who already reside in cities. Using household data of the China Family Panel Studies dataset, the paper investigates the impact of those residential status changes on household consumption. The results of the analysis suggest that moving up the residential ladder in this way will likely result in increased consumption by almost 30% for both groups of people and thus contribute to rebalancing of the economy. Higher incomes and longer times in education are important drivers of this process, while a greater number of children in the family discourages consumption.

This Working Paper relates to the 2017 OECD Economic Survey of China (www.oecd.org/eco/surveys/economic-survey-china.htm).

Keywords: China, consumption, urbanisation, residential status, migrant workers, rebalancing

JEL: E21, P23, P25, J61

Urbanisation et Consommation des Ménages en Chine

Le présent document de travail traite du lien entre urbanisation et comportements de consommation en Chine. L'urbanisation s'entend ici comme l'installation de populations rurales dans des villes et l'obtention, par des travailleurs migrants, du statut de résident urbain, dans un contexte où le gouvernement prévoit d'installer 100 millions de ruraux dans des villes et d'accorder le statut de résident urbain à 100 millions de travailleurs migrants déjà citadins. À partir de données sur les ménages issues de l'enquête « China Family Panel Studies », les auteurs étudient les conséquences de ces évolutions du statut résidentiel sur la consommation des ménages. L'analyse laisse à penser que ces évolutions du statut résidentiel entraîneront probablement une augmentation de la consommation de près de 30 % dans les deux groupes concernés, ce qui contribuera au rééquilibrage de l'économie. La hausse des revenus et de la durée des études jouent un rôle majeur dans ce processus, alors que l'augmentation du nombre d'enfants pèse sur la consommation.

Ce Document de travail se rapporte à l'Étude économique de l'OCDE de la Chine, 2017 (www.oecd.org/fr/eco/etudes/etude-economique-chine.htm).

Mots-clés : Chine, consommation, urbanisation, statut de résident, travailleurs migrants, rééquilibrage

JEL: E21, P23, P25, J61

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URBANISATION AND HOUSEHOLD CONSUMPTION IN CHINA

By Margit Molnar, Thomas Chalaux and Qiang Ren¹

Setting the scene – rebalancing and urbanisation

The Chinese economy is in the process of rebalancing from investment-led to consumption-led growth. So far, this rebalancing has been achieved through slowing investment rather than accelerating consumption. While investment did need to slow, insofar as over-investment led to decreasing investment efficiency, there is ample room for growth to be driven increasingly by consumption.

Indeed, the slow pace of rebalancing towards consumption-led growth is to a large extent attributable to very high household saving (OECD, 2017). Limited social security coverage and the uneven quality of public goods and services provided across the country incentivise people to save for old-age security, for the case of illness or for the education of their offspring. Such saving motives have been strong, though are being reduced by continuing reforms. The introduction of the New Cooperative Medical Scheme, for instance, has contributed to the reduction of saving rates in all but the poorest groups in rural China (Cheung and Padieu, 2014). Nevertheless, since its peak in 2010, the saving rate has fallen by only a couple of percentage points. Government social programmes leave many below the poverty line without any support (Westmore, 2017).

The Chinese government announced plans to continue urbanisation. In terms of the urbanisation rate, China lags behind not only more advanced economies, but also behind some of the other large emerging economies (OECD, 2015). For the 2016-20 13th Five Year Plan period, the government envisages (i) 100 million rural residents moving to cities, (ii) extending the provision of public services to another 100 million migrant workers who already live in cities but are excluded from the public services that urban *hukou* (residence permit) holders benefit from and (iii) improving the living conditions of another 100 million urbanites living in shanty towns. These changes will all contribute to reducing the need for household saving and thus boost consumption.

Drawing on a recent set of household-level data, this paper looks at the consumption patterns of rural, migrant and urban residents and the underlying drivers. Comparing those patterns will allow inferences about the foreseeable impact of the relocation of rural residents and of improving the status and living conditions of the migrants who already live in urban areas. A major contribution of this paper is showing how urbanisation – which is captured as the change in residential status of rural residents into migrants and migrants into urban citizens – affects consumption. While there have been studies such as Dreger et al. (2013) looking at the differences in consumption determinants between urban residents and migrants, to the authors' best knowledge, no empirical study has so far attempted to capture the impact of the change in residential status on consumption.

The paper first introduces the micro-level dataset used for the analysis. It then turns to the consumption patterns of households with different residential status before investigating the potential impact of further urbanisation and the determinants of household consumption of urban, rural and migrant

¹ Margit Molnar and Thomas Chalaux are from the OECD's Economics Department and Qiang Ren is Professor at the Centre for Social Research/Institute of Social Science Survey of Peking University. The authors would like to thank Balázs Égert, Ben Westmore and Jean-Marc Fournier from the OECD Economics Department, Rudiger Ahrend from the OECD Centre for Entrepreneurship, SMEs, Local Development and Tourism and participants to an internal seminar discussing the paper for valuable comments on earlier drafts. Special thanks go to Sisse Nielsen, Laura Dockings and Mercedes Burgos, also from the OECD Economics Department, for editorial assistance.

households. The paper also looks at consumption patterns and the underlying factors by consumption decile.

Household data used for the analyses

The paper uses the China Family Panel Studies (CFPS) survey to provide insights into household consumption. The CFPS survey is a longitudinal one launched in 2010 and conducted by the Institute of Social Science Survey at Peking University. It includes detailed information on respondents' family composition, economic activities, education and living conditions. The structure of the CFPS follows that of the Panel Study of Income Dynamics of the United States, with data collected at five levels: (i) community, (ii) family, (iii) family members, (iv) adults and (v) children in the family (Shen and Lei, 2012).

The survey covers all household members, not only the head or main representative of the household. Family member information is obtained through person-to-person interviews of all adult family members and children above ten, thus the analysis does not need to rely on the main representative or the respondent's data to represent the household (except for information on children below ten, which is obtained primarily from the main caretaker and also from other family members). Instead, household averages are computed per person in a family for the purposes of the analysis in this paper.

The survey defines the household as people living together and/or tied by economic dependency. Family members can be immediate relatives who are economically interdependent or non-immediate relatives who are economically related and have been living in the household for at least three months continuously (Xie and Hu, 2014). The survey tracks members of a family in subsequent waves and around 70% of the households are retained across waves. The full CFPS survey was undertaken in 2010, 2012, 2014 and 2016, although the last wave is not yet available for analysis.

Sample size and representativeness

The survey covers 25 provinces or municipalities² (excluding Hainan, Inner Mongolia, Ningxia, Qinghai, Tibet and Xinjiang) that collectively account for 94.5% of China's total population. It used multistage probability proportional to size sampling with implicit stratification. The three stages for obtaining subsamples include (i) the city district or county, (ii) a neighbourhood community in cities or a village and (iii) the household. The data for those 25 provinces/municipalities are representative of those 25 provinces/municipalities. The sampling strategy ensures that five provinces/municipalities are representative at the province/municipality-level: Shanghai, Liaoning, Henan, Gansu and Guangdong.

A major shortcoming of the CFPS survey is its small sample size relative to China's population size and the number of variables collected. The original plan was to collect data for 16 000 households, which was already small, and the size of the sample for which data were actually collected and are suitable for analysis is even smaller. Even though the whole sample matches the age and gender structure of China's overall population, in various dimensions, such as for instance the rural-urban split or the structure of spending, it does not. Considering missing values and the large number of variables that are used in this paper, using the weighted sample would not provide a representative sample. As in this paper a major focus of analysis is the difference between consumption by people with different *hukou* status, the paper uses the unweighted sample of the 25 provinces/municipalities.

2. The 25 provinces and municipalities include Beijing, Tianjin, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Fujian, Guangdong, Guangxi, Guizhou, Yunnan, Sichuan, Chongqing, Gansu, Shaanxi, Shanxi, Shanghai, Anhui, Zhejiang, Shandong, Jilin, Heilongjiang and Liaoning.

Definition of major variables

Most basic variables, such as household income or consumption are compiled from the CFPS questionnaire and provided by the Institute of Social Science Survey at Peking University. Compilation involved aggregating the different income and consumption categories obtained directly from the survey. In addition, the Institute also undertook substantial work in filling missing data from available information, checking consistency, extrapolating and interpolating data and making other adjustments based on available information and personal judgment. This may affect the statistical properties or the accuracy of analyses conducted using this dataset.

Household income

Household income is the sum of salary income, operating income, property income, welfare benefits and other types of income of the household. Salary income of the household was obtained directly from the household-level questionnaire, but if it was missing or zero while the sum of salary income of household members was non-missing and was above zero, it was calculated as the sum of each family member's salary income. Household operating income is the sum of non-salary and business income. The former depends on whether the household is engaged in agricultural production. If so, then their non-salary income is their net income from agricultural production. Business income is calculated from the ownership shares and profit of businesses the family owns.

Property income includes rental income from housing, land, production or other materials. Interest income is supposed to belong to this category, but owing to many missing values, it was not included.

Transfer income includes personal transfer income, presents, government transfers and pensions/severance payments. Personal transfer income is defined as the highest value for support from family and friends among adult members interviewed less caretaking spending by the family. Presents are the cash equivalent of presents received by household members. Government transfers is the sum of transfers received by family members from all government levels. Pension/severance pay is the sum of social security benefits, severance payments, minimum subsistence allowance (*dibao*) etc. received by family members.

Furthermore, compensation income related, for instance, to land acquisition by the government or capital gains on assets held by the family are not included in household income. The former is not included as it is a result of a decrease in asset holding; the latter is due to purely technical reasons as there was no question on the value of the assets held at the time of their acquisition.

Household consumption

In the CFPS questionnaire, household consumption covers daily spending items recorded on a monthly basis and special spending items recorded on an annual basis. Altogether ten spending categories are considered as part of household consumption: food, clothing, transportation, communication, education, entertainment, housing (which includes rent, estate management, heating and other utilities), health, and other daily spending/necessities (which include car purchase and maintenance, electric appliances, beauty products and services, lottery and other commercial services). The household-level questionnaire covers all this information. The Institute of Social Science Survey at Peking University grouped education with entertainment/leisure and communication with transport spending, so in the end eight categories are available for analysis.

Spending on purchases of housing or reconstruction/upgrading is highly volatile, therefore is not included. Neither are purchases of commercial insurance and transfers to relatives or others not living together. This latter category comprises different sub-items in different years, for instance taxes and fees

paid to relevant government departments are included in one year but not in another, therefore is not included in the analysis in this paper.

In contrast to income-related questions, where a relatively large number of people refuse to specify the cash value of presents or personal transfers they receive, the refusal rate for consumption items is very low (Shen and Lei, 2012). For instance, in 2010, only four households refused to reply how much they spend on clothing, one on each of food, transportation and housing. Even so, some people appear not to know how much they spend on food, other daily necessities or transportation.

The CFPS questionnaire did not explicitly ask about the value of self-produced and self-consumed food. The Institute of Social Science Survey at Peking University therefore used the rural part of the 2007 China Household Income Project (CHIP) undertaken by the Institute of China's Income Distribution, Beijing Normal University, the Inter-University Consortium for Political and Social Research and the University of Michigan to correct for that omission. In so doing, they only used the rural part of that survey, as it is mainly rural households who engage in agricultural production.

Defining urban, migrant and rural households

A major issue for the analysis in this paper is what constitutes an urban, a migrant and a rural household. Following the majority principle, i.e. the household's residential status is defined by the status of the majority of its members, a household is considered urban if the majority of its members reside in urban areas and have a non-agricultural (i.e. urban) *hukou* (Box 1). A household is considered migrant if the majority of its members reside in urban areas but have a rural/agricultural *hukou* and rural if the majority of its members live in rural areas and have a rural/agricultural *hukou*.

Box 1. The Chinese *hukou* system

The household registration or *hukou* system is a specific feature of the Chinese society dating back to ancient times. At present, it is administrated by the local police bureaux and keeps a record of residents in the respective area. Until China's opening up and reforms in the 1980s, the system managed to effectively control population flow from rural to urban areas. Afterwards, rural or so-called migrant workers were instrumental for China's success in becoming the "factory of the world". At the same time, however, the increase of migrants in cities sharpened the contrast with urban citizens who have access to a range of public services linked to their *hukou*. Those include health and education, thus individual opportunity is determined early in life: being born in urban or rural areas leaves a mark on one's career and life (OECD, 2015). While *hukous* can be rural and urban (i.e. either agricultural or non-agricultural), the best resources both in terms of healthcare and education are concentrated in the biggest cities. It is therefore not surprising that the relaxation of access rights to public services based on *hukou* is advancing faster in smaller cities. The conditions are much less restrictive there, while big cities introduced point systems taking into account factors such as the number of years of social security contribution in the city. Granting access to public services to all citizens regardless of *hukou* is a stated objective for the government.

Source: Various State Council documents.

To define whether an area is urban or rural, the community-level questionnaire of the CFPS survey identifies whether the given community is a village or an urban neighbourhood. At the individual level, each family member's *hukou* type is identified in the questionnaire.

The above classification of migrant households ignores "urban-urban" migrants, who have an urban *hukou* but reside in other city than the one of their *hukou*. This includes migrant workers moving from smaller to larger cities, but also professionals job hopping across large cities. These migrants (who represent around 1-2% of the total sample) are not the focus of the analysis, nor are "urban-rural" migrants

(not present in this sample) who typically seek to maintain the right to use the family land when no other siblings living with the elderly parents inherit the land rights. As the focus of this paper is to look at the consumption patterns of urban, migrant and rural workers to infer the potential impact of urbanisation, the exclusion of people with urban *hukou* living in rural areas (around 2% of the original sample) is warranted.

The share of migrants in the CFPS Survey is much larger than what NBS surveys revealed: in 2010, around 22% of households were migrants in the CFPS survey, while the share of rural residents taking up jobs outside their townships was 11% in the same year according to the NBS (the corresponding figures were 21% and 12% in 2012, and 22% and 12% in 2014, respectively). One reason for the sizeable discrepancy is that those two concepts are not perfectly interchangeable. CFPS surveys the *hukou* status of all household members, while the NBS focuses on rural residents engaging in non-agricultural work and their questionnaires do not cover dependents of migrants. Furthermore, in the CFPS microdata the share of migrant households is looked at, which is determined based on the majority principle, i.e. if the majority of the household members are migrants, then the household is a migrant household. In contrast, NBS looks at the number of individuals. While a higher share sounds plausible, there is no reference as to how much higher it should be relative to NBS data.

The CFPS is more suitable than other accessible surveys to look at migrants' consumption behaviour. It is not affected by selection bias as it does not only survey migrants, and family members are traced in subsequent waves even if they move away or "migrate" to other places for study, work, marriage or other reasons (Xie and Hu, 2015). Therefore, for the purposes of this paper, the CFPS survey is the most appropriate accessible source of information.

Consumption patterns of urban, migrant and rural households differ

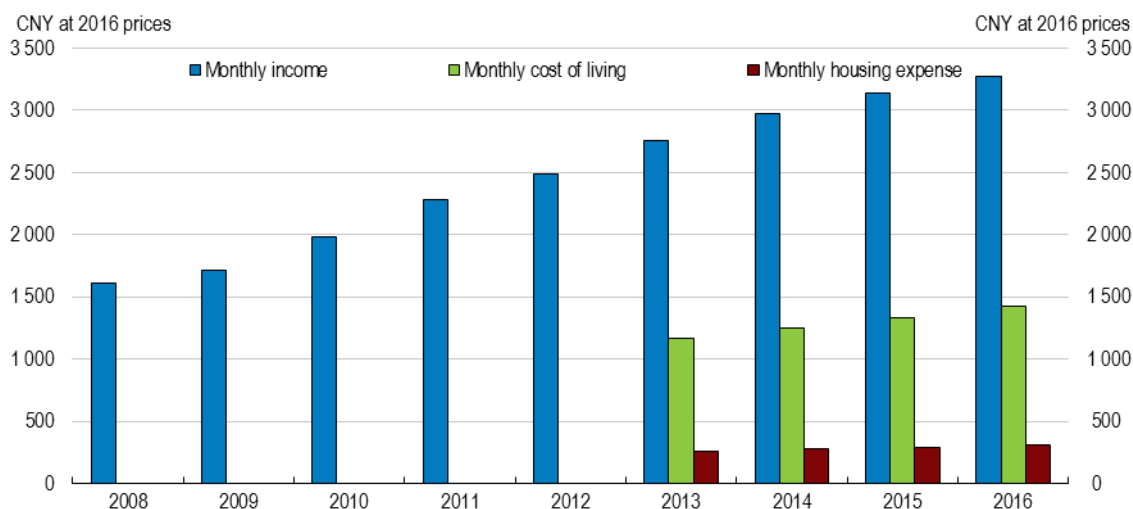
Higher incomes have long attracted rural surplus labour to cities, even though migrants cannot earn as much as urbanites and in most cities until very recently, could not benefit from the same public services and social security. NBS data indicate that migrant incomes have increased steadily over the years (Figure 1), though recently it has become less attractive to migrate to cities. This may partly be attributed to the slowdown of the economy, in particular of manufacturing industries that employ tens of millions of migrant workers. Also, the differential between rural and migrant incomes is narrowing, partly owing to more/better non-agricultural job opportunities in the countryside.

As a result, an increasing number of rural residents take up non-agricultural jobs in their homeplace (township) (Figure 2), without having to move. Consumption data for migrants have only been made available for recent years (Figure 1). The modest increases may be related to increasing migration flows within provinces and decreasing migration flows across provinces to the biggest cities.

While such data are the only public sources of information collected in the NBS migrant surveys, they suffer from an important shortcoming. Surveyors do not interview migrants directly, but collect the information from migrants' household members who remain in the countryside. 236 000 migrants' families in 8906 villages of 1527 counties were selected for the survey and the results are considered reliable for the number and the destination of migrant workers. However, the accuracy of such information concerning either incomes or consumption of family members working in faraway cities may be questionable. The NBS has recently started to collect information regarding major variables directly from migrants, though the results are not publicly available.

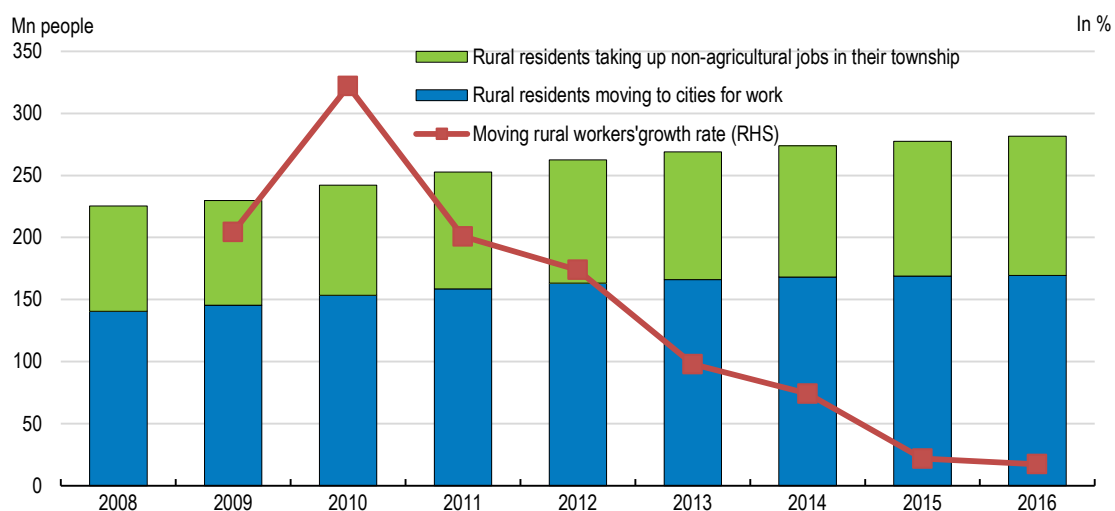
Figure 1. Migrants' income and consumption

Per capita



Note: Data cover migrant workers and are based on surveys of their household members remaining in the countryside (if no household members remained, then the village chief). Housing expense is a component of the cost of living.

Source: National Bureau of Statistics.

Figure 2. Rural dwellers increasingly take up jobs in their hometowns, while the number taking up jobs in cities stagnates

Note: In the general terminology, rural workers (in English often phrased as migrants) refer to both groups in the figure. In this paper, however, migrants only refer to rural people taking up non-agricultural jobs in urban areas as the major interest here is urbanisation.

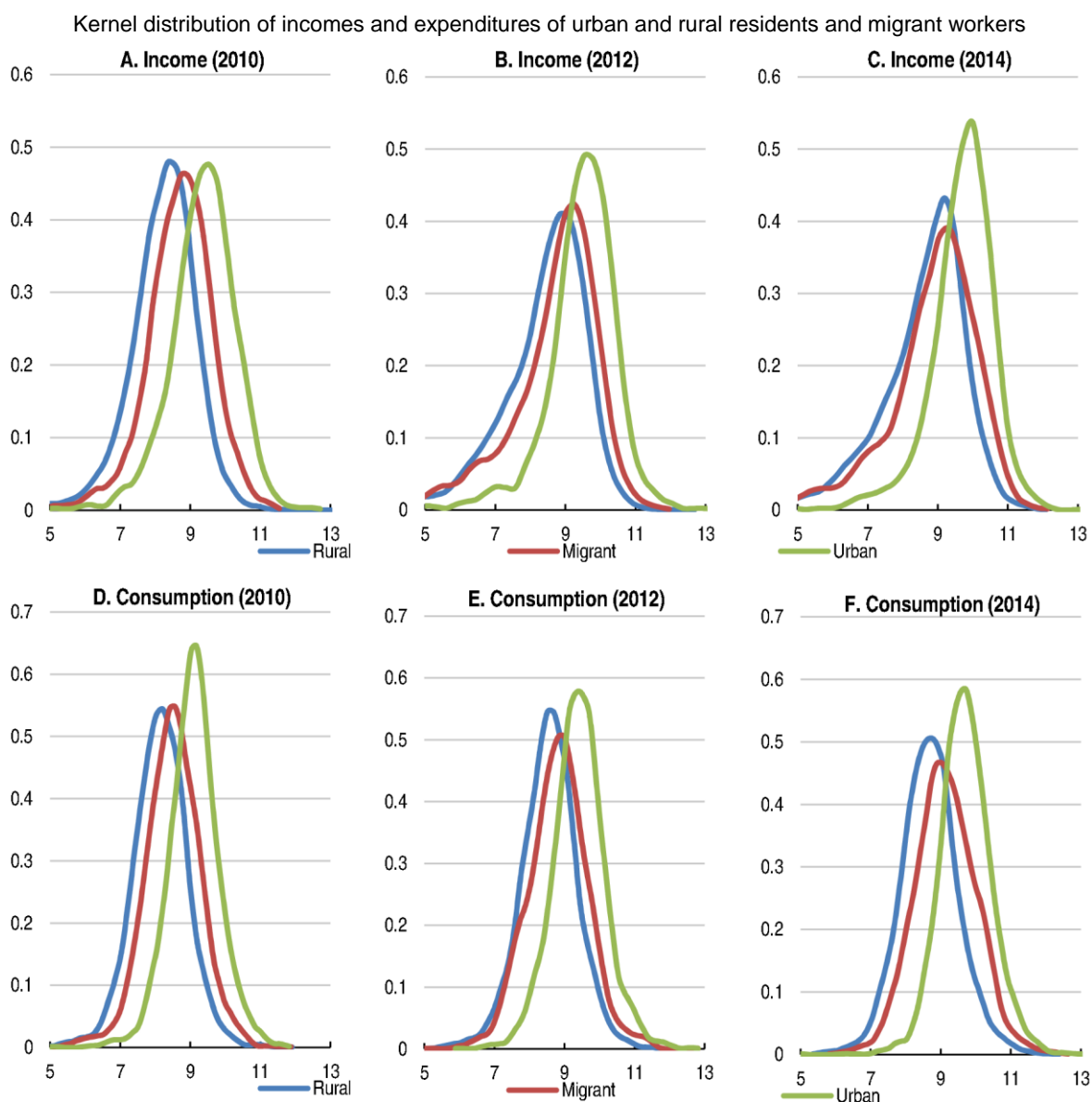
Source: National Bureau of Statistics.

Distribution of consumption and income of urban, rural and migrant families based on the CFPS

Looking at the distribution of income and consumption by urban and rural residents as well as migrant workers provides further insights into household consumption by the three groups. The distribution is

derived using an Epanechnikov kernel function on the unweighted data. While urbanites still had a substantial lead in terms of income in 2014, the differential between rural and migrant workers diminished (Figure 3, Panels A, B and C). On the spending side, the changes are somewhat less striking, even though migrants continue to spend much more than rural residents as the fat tail indicates (Figure 3.F).

Figure 3. Urban-migrant-rural income and consumption



Notes: Household average income and spending in nominal terms. The densities are using an Epanechnikov kernel function on the unweighted data. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*. Income and consumption are expressed in logarithm and on a per capita basis.

Source: OECD calculations using the China Family Panel Studies database.

For urban and migrant workers, the right tail of the consumption distribution thickened over 2010-14 (Figure 3 Panels D, E and F), pointing to the growing size of the group of people with middle-class and above life styles. This phenomenon is more pronounced in the case of migrant workers.

Spending patterns reveal that migrant families spent much more than rural families and urban families much more than migrant families in all the three years, as expected (Table 1). Migrant families were smaller than rural families, but larger than urban ones at 3.9 people on average, compared to 4.4 people in rural and 3.3 in urban families in 2014. Family sizes among urbanites and rural people increased slightly in 2012 relative to 2010 and then remained the same in 2014. In the case of migrants, however, the family size increased from 3.8 in 2010 to 4.1 in 2012 and then decreased to 3.9 in 2014. The fluctuation is attributable to changing number of children, young and old people in the family, which point in different directions. The average ages increased consistently for all the three types of residents, reaching 46.4 for an urban and 41.3 for migrant and 41.9 for rural families in 2014. The age increases are not only attributable to population ageing in China, but also to the fact that the analysis followed the same households, i.e. families in 2010 were also in the dataset in 2012 and likewise those in 2014 were in the database in 2012 (but families in 2014 were not necessarily in the database in 2010). As a rule, at least 70% of the sample is followed up in the next wave.

The number of years that people spent in education increased for all the three groups over the years, again largely because of the way the sample used for the analysis was constructed. In the original sample, the number of years spent in education for 2014 slightly decreased for rural and urban citizens, which may be related to the fact that the 2014 questionnaire was, to a large extent, conducted through telephone interviews, thus increasing the potential for errors. The old-age dependency ratio increased consistently for all three types of residents over 2010-14. The share of children decreased for all the three groups over 2010-14, while the share of youth in the family decreased for rural and urban people and slightly increased for migrants in 2014. Again, these features are related to the continuity of the households followed in the consecutive waves.

Table 1. Consumption patterns of urban, migrant and rural households, 2010, 2012 and 2014

Per capita CNY at current prices unless otherwise indicated

	2010				2012				2014			
Status	Rural	Migrant	Urban	Total	Rural	Migrant	Urban	Total	Rural	Migrant	Urban	Total
Income	5,656	8,814	17,103	9,035	7,650	10,214	19,732	11,357	9,286	12,517	23,141	13,664
Consumption expenditure	4,674	6,681	11,628	6,746	7,172	9,808	16,489	10,169	8,583	13,976	21,986	13,310
Assets	36,755	82,496	196,510	84,277	46,045	95,711	227,432	104,049	56,293	121,897	276,764	129,030
Consumption by items:												
Food	1,691	2,408	4,313	2,464	3,061	3,797	6,146	4,025	2,716	4,772	8,617	4,728
Healthcare	777	899	1,485	970	868	1,036	1,436	1,052	1,094	1,352	1,980	1,385
Clothing	179	309	582	302	332	499	914	520	418	741	1,165	686
Housing	222	449	875	425	379	661	1,197	652	1,661	2,639	3,267	2,299
Other daily necessities	489	794	1,418	774	1,022	1,681	2,856	1,641	1,041	2,024	2,783	1,717
Transport and communication	547	868	1,362	809	561	799	1,368	823	808	1,189	1,647	1,113
Education and leisure	553	770	1,358	789	601	815	1,790	958	738	1,048	2,114	1,170
Other	216	185	235	214	349	521	782	499	108	210	413	211
Family size (number of members)	4.3	3.8	3.2	3.9	4.4	4.1	3.3	4.1	4.4	3.9	3.3	4.0
Age (years)	38.0	39.2	43.6	39.6	40.0	40.7	44.9	41.4	41.9	41.3	46.4	43.0
Years in education	6.5	7.4	9.9	7.5	7.1	7.8	10.2	8.0	7.2	8.1	10.4	8.2
Observations (households)	4,578	1,803	1,967	8,348	4,517	1,798	2,245	8,560	4,686	1,964	2,402	9,052
Observations (individuals)	19,529	6,933	6,350	32,812	19,958	7,365	7,503	34,826	20,543	7,616	7,988	36,147
Child ratio (<16 / hhd size)	0.17	0.15	0.11	0.15	0.14	0.11	0.10	0.12	0.11	0.09	0.08	0.10
Youth ratio (16-25 / hhd size)	0.15	0.14	0.10	0.14	0.14	0.14	0.09	0.13	0.13	0.15	0.08	0.12
Old ratio (>64 / hhd size)	0.10	0.10	0.15	0.11	0.12	0.12	0.17	0.13	0.15	0.13	0.19	0.15

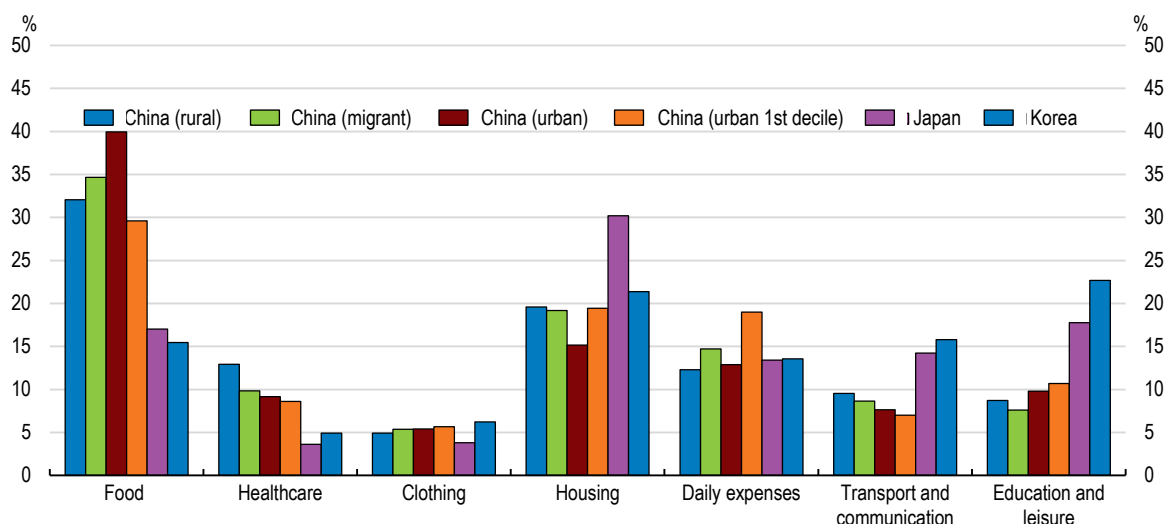
Notes: A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD calculations using the China Family Panel Studies database.

Urbanisation brings about changes in consumption patterns. For instance, urbanites tend to spend more on education and leisure. Within urban residents, however, there are large differences: the people in the top decile of the urban expenditure distribution spend much less on food³, displaying a consumption pattern increasingly similar to that of the average household in advanced economies such as Japan or Korea (Figure 4).

Figure 4. Affluent urban households spend almost as little on food as people in Japan and Korea

Share of spending by urban, rural and migrant households, the richest 10% urban residents in China and average households in Japan and Korea, 2014



Note: Only categories that are common in the Chinese, Japanese and Korean data are included. The urban first decile corresponds to the top 10% of urban household in terms of spending.

Source: Authors' calculations based on the China Family Panel Studies database and National Accounts data for Japan and Korea.

Consumption patterns by decile

Consumption patterns vary not only across residential categories but also across consumption deciles. The lowest spending decile directed half of its spending to food, while the most affluent one only about 28% (Table A.1) in 2010. This differential narrowed for the bottom decile in 2012, with the former spending around 41% and the latter still around 28% on food (Table A.2). In 2014, both edges of the distribution showed changes: the bottom decile directed 38% and the top decile 25% of its spending to food (Table 2).

3. This is consistent with Engel's law, which states that as income rises, the share of expenditure on food declines.

Table 2. Consumption patterns of households by decile, 2014

CNY in current prices unless otherwise indicated

Deciles (2014)	1	2	3	4	5	6	7	8	9	10	Total
Income	5,617	6,544	7,840	8,389	9,649	11,446	13,949	16,982	21,901	34,334	13,664
Consumption expenditure	1,822	3,341	4,633	6,018	7,628	9,532	12,093	15,925	22,544	49,579	13,310
Assets	32,226	40,439	54,989	60,451	76,291	92,682	126,167	167,583	228,589	411,053	129,030
Consumption by items:											
Food	697	1,335	1,877	2,462	3,243	3,973	5,270	6,957	9,006	12,464	4,728
Healthcare	258	420	550	700	747	1,069	1,229	1,464	2,846	4,569	1,385
Clothing	129	215	295	357	453	488	621	811	1,135	2,361	686
Housing	244	405	556	771	950	1,200	1,592	2,251	3,093	11,935	2,299
Other daily expenses	141	274	400	472	596	818	985	1,392	2,289	9,802	1,717
Transport and communication	226	389	513	635	792	903	1,146	1,419	1,904	3,209	1,113
Education and leisure	107	262	391	552	754	969	1,100	1,414	1,889	4,267	1,170
Other	21	39	51	69	94	112	151	217	382	972	211
Family size (number of persons)	5.0	4.5	4.5	4.4	4.2	4.0	3.7	3.6	3.1	3.0	4.0
Age (years)	44.1	43.6	42.6	42.2	41.8	43.1	42.4	42.7	44.6	42.7	43.0
Years in education	6.6	6.9	7.1	7.4	7.8	8.1	8.7	9.2	9.7	10.8	8.2
Child ratio (<16 / hhd size)	0.11	0.11	0.12	0.12	0.11	0.10	0.10	0.09	0.07	0.06	0.10
Youth ratio (16-25 / hhd size)	0.11	0.11	0.11	0.12	0.13	0.12	0.12	0.12	0.13	0.13	0.12
Old ratio (>64 / hhd size)	0.19	0.17	0.15	0.15	0.12	0.15	0.14	0.15	0.19	0.13	0.15
Share of consumption:											
Food	38.3	40.0	40.5	40.9	42.5	41.7	43.6	43.7	39.9	25.1	35.5
Healthcare	14.1	12.6	11.9	11.6	9.8	11.2	10.2	9.2	12.6	9.2	10.4
Clothing	7.1	6.4	6.4	5.9	5.9	5.1	5.1	5.1	5.0	4.8	5.2
Housing	13.4	12.1	12.0	12.8	12.5	12.6	13.2	14.1	13.7	24.1	17.3
Other daily expenses	7.7	8.2	8.6	7.8	7.8	8.6	8.1	8.7	10.2	19.8	12.9
Transport and communication	12.4	11.6	11.1	10.6	10.4	9.5	9.5	8.9	8.4	6.5	8.4
Education and leisure	5.9	7.8	8.4	9.2	9.9	10.2	9.1	8.9	8.4	8.6	8.8
Other	1.1	1.2	1.1	1.1	1.2	1.2	1.3	1.4	1.7	2.0	1.6

Note: Deciles are defined for consumption.

Source: OECD calculations using the China Family Panel Studies database.

The impact of moving up the “residential ladder”

The best way to look at the impact of rural people moving to cities and of “urbanising” migrant workers who are already in cities is to look at how the consumption behaviour of those people who move up this “residential ladder” between 2010 and 2014 changes. Based on a panel of 2010, 2012 and 2014 data, roughly 229 rural households, who lived in the countryside in 2010, migrated to cities to work by 2012 (Table 3), while keeping their rural *hukou*. During the same period, 286 migrant families obtained an urban *hukou*. The corresponding numbers for households moving up the residential ladder over 2012-14 are 106 and 115, respectively (Table 3).

Table 3. Changes in households’ residential (*hukou*) status in 2010-12 and 2012-14

2010/2012	Rural	Migrant	Urban
Rural	4,752	229	7
Migrant	32	1,650	286
Urban	0	58	2,038

2012/2014	Rural	Migrant	Urban
Rural	4,656	106	22
Migrant	30	1,792	115
Urban	0	66	2,265

Note: A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members resides in cities but have a rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD calculations using the China Family Panel Studies database.

While there have been other types of changes in household *hukou*, these two types count as “moving up the residential ladder” and are targeted by government plans, making the change in their consumption behaviour the focus of this paper.

To examine how the change in residential status affects consumption, first the dummies for different types of households were defined. Separate dummies were constructed for households not changing their status, be it urban, rural or migrant, respectively. Also a set of dummies were constructed for those households who changed their status from rural to migrant or migrant to urban. Then the change of consumption in 2012 relative to 2010 and in 2014 relative to 2012 (and income and assets in a separate regression) was regressed on those dummies. The change of income over that period was included as a control variable. The results indicate that moving from rural to migrant status substantially raises spending (and income) (Table 4). “Upgrading” from migrant to urban status also boosts spending by a third (though income only increased by 16%). While these coefficients are statistically significant at the 1% level and appear with the expected signs, they should be interpreted with care. Due to the small original sample size, the results cannot be considered representative. Nevertheless they indicate that moving up the “residential ladder” may boost consumption and therefore contribute to rebalancing the economy.

Table 4. Moving up the "residential ladder" boosts consumption

Regression coefficients of spending/income/assets change on residential status change dummies, 2010-14

2010-14	Income	Consumption	Assets
Income		0.07 ***	0.10 ***
Rural-rural	0.16 ***	0.24 ***	0.22 ***
Rural-migrant	0.40 ***	0.28 ***	-0.02
Migrant-migrant	0.03	0.31 ***	0.29 ***
Migrant-urban	0.17 **	0.27 ***	0.28 ***
Urban-urban	0.17 ***	0.28 ***	0.24 ***
R2	0.01	0.10	0.05
Observations	16,846	16,846	16,846

Note: * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. Income, consumption and assets data are (changes in) household average income, consumption and assets in nominal terms. Even accounting for the roughly 6% average CPI inflation over 2010-12 and 2012-14, rural households would have a 10% real income growth. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*. Changes in income, consumption and assets are in log differences and on a per capita basis. In the consumption and assets equations, change in income is included as a control variable.

Source: OECD estimations using the China Family Panel Studies database.

What household features affect consumption?

To examine the major drivers of household consumption, it was regressed on basic household features using the 2010, 2012 and 2014 samples separately and on the pooled 2010-12-14 dataset (Table 5). The explanatory variables include average income, average household age, average years of education, the share of small children (below 16) and youth (16-25) as well as elderly people (above 65) in the family. Consumption, income, age and years of education are expressed on a per capita basis and consumption and income are in logarithms. In addition, dummies indicating residential status are also included. The rural status dummy is used as a base for comparison and therefore dropped. The cross-section regressions only allow inferring about correlations between consumption and the explanatory variables, not establishing causal relationships. The pooled regression in the last column in turn allows exploiting also the time dimension of the data and includes year dummies. For estimation, the ordinary least squares (OLS) estimator is used with robust standard errors clustered at the province level.

Most variables appear with the right sign and most are statistically significant at the 1% level. A unit increase in income is associated with a fifth-of-a-unit increase in consumption. The small size of the coefficient indicates that an increase in incomes alone would only lead to slow rebalancing. The size of the coefficient is not very different from the one estimated by Nicklaus (2015) at 0.27 using the China Household Finance Survey's 2011 wave, which included 8438 households. Estimates for earlier years, however, show much higher coefficients: for instance, Dreger et al. (2013) estimated 0.77 for urban and 0.83 for migrant households in 2007 using the China Household Income Project (CHIP) dataset's 2002 and 2007 wave including 10 000 households in the latter year. The settings in those studies, however, are not exactly the same as in this paper, therefore the results are also not directly comparable. For instance, those studies do not control for the share of children, youth and old in the family as this paper does.

On average, the more educated family members are (captured by the average number of years spent in education), the more they consume. Even though the coefficient is small, increased education can be another driver of rebalancing. This is in line with the findings of Nicklaus (2015), where the size of the estimated coefficient increases with higher education levels.

The share of young children or youth in the family, in contrast, is negatively associated with consumption (in the regressions variables are on a per capita basis). This may be explained by saving to send children to expensive preparatory courses to try to enrol in good schools (Croll, 2006).

Age (measured by the average age of household members) does not appear to have a statistically significant association with consumption, neither in the pooled, nor in the cross-section regressions. In contrast, older people tend to hold more assets, which is explained by the longer time they have had to accumulate them. Nicklaus (2015) found a statistically significant negative coefficient on the age variable, though he did not control for the age composition of the household as this paper did by including the kids, teens and olds ratios.

The coefficients for both the migrant and urban dummies are positive and statistically significant at the 1% level, indicating that both groups spend more (and have higher incomes) than rural residents (the dummy for which is dropped and is used as a base to compare the other two groups). The coefficients are relatively large as migrants and urban citizens tend to consume more even after controlling for income and family characteristics. The coefficient on the urban dummy at 0.5 in the stacked regression including 2010, 2012 and 2014 data, for instance, seems much higher than the 0.33 estimated by Nicklaus (2015) for 2011, but the one in 2010 at 0.36 is very close. Dreger et al. (2013) showed that the average propensity to consume is 5-6 percentage points higher for urban *hukou* holders relative to migrants at similar income levels and controlling for socio-demographic characteristics. They used the 2002 and 2007 waves of the CHIP survey. As above, the results are not directly comparable due to different model settings.

The coefficients for the 2012 and 2014 dummies are positive and statistically significant and relatively large, with the exception of the coefficient on the 2012 dummy in the income equation. As time passes, people tend to consume more. This may be related to the availability of an increasing choice of goods and services every year to consume and the improving environment for consumption, for instance the proliferation of e-commerce and mobile payment services.

Table 5. “Higher” residential status is associated with higher consumption

	2010			2012			2014			2010-14		
	Income	Consumption	Assets	Income	Consumption	Assets	Income	Consumption	Assets	Income	Consumption	Assets
Income Status		0.34 ***			0.13 ***			0.19 ***			0.20 ***	
Migrant	0.31 ***	0.15 ***	0.44 ***	0.13 **	0.17 ***	0.43 ***	0.12	0.34 ***	0.43 ***	0.19 ***	0.24 ***	0.44 ***
Urban	0.62 ***	0.36 ***	0.62 ***	0.66 ***	0.47 ***	0.68 ***	0.70 ***	0.59 ***	0.74 ***	0.66 ***	0.50 ***	0.69 ***
Kids ratio	-0.92 ***	-0.41 ***	-0.22	-0.61 ***	-0.07	0.06	-0.43 ***	0.03	0.38	-0.59 ***	-0.18 ***	0.03
Teens ratio	-0.62 ***	-0.20 **	-0.49 **	-0.20	-0.19 ***	-0.57 ***	-0.04	0.02	-0.56 ***	-0.24 ***	-0.12 **	-0.53 ***
Olds ratio	-0.26 **	0.01	-0.69 ***	-0.24 ***	-0.05	-0.43 ***	-0.22 ***	0.11 **	-0.64 ***	-0.25 ***	0.01	-0.60 ***
Age	-0.00	0.00	0.02 ***	-0.00	0.00	0.02 ***	0.00	-0.00	0.02 ***	0.00	0.00	0.02 ***
Education	0.13 ***	0.05 ***	0.15 ***	0.13 ***	0.07 ***	0.16 ***	0.12 ***	0.07 ***	0.14 ***	0.13 ***	0.06 ***	0.15 ***
Dummies year												
2012										0.02	0.31 ***	0.23 ***
2014										0.19 ***	0.47 ***	0.34 ***
Constant	7.69 ***	5.06 ***	8.30 ***	7.67 ***	6.95 ***	8.58 ***	7.69 ***	6.56 ***	8.76 ***	7.56 ***	6.07 ***	8.37 ***
R2	0.29	0.40	0.18	0.19	0.24	0.24	0.20	0.33	0.19	0.23	0.36	0.22
Observations	8,348	8,348	8,348	8,522	8,522	8,522	9,052	9,052	9,052	25,922	25,922	25,922

Note: Income, consumption and assets are in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

How do household features affect spending on various items?

To get further insights into the consumption of the various groups, spending on selected consumption items was examined. More specifically, spending on various consumption categories (one at a time) was regressed on a number of household features using the 2010, 2012 and 2014 datasets separately and the stacked 2010-12-14 dataset (Tables A3-A5). As above, those features include average income, average household age, average years of education, the share of small children (below 16) and youth (16-25) as well as elderly people (above 65) in the family and dummies indicating residential status.

Older households tend to spend less on transport and communication and other daily necessities and more on food and healthcare, with coefficients significant at the 1% level in the stacked 2010-12-14 data analysis (Table 6). The coefficients on the age variable, however, are very small in all equations.

Table 6. Determinants of spending by category, 2010-14

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Status					
Migrant	0.01 **	-0.01 ***	-0.01 **	-0.00 *	0.00
Urban	0.05 ***	-0.02 ***	-0.01 ***	-0.01 ***	-0.01 **
Child ratio	0.03	-0.04 ***	0.18 ***	-0.08 ***	-0.04 ***
Youth ratio	-0.05 *	-0.04 ***	0.22 ***	-0.03 ***	-0.05 ***
Olds ratio	-0.02 **	0.05 ***	-0.01	-0.02 ***	-0.00
Age	0.00 ***	0.00 ***	0.00	-0.00 ***	-0.00 ***
Education	-0.01 ***	-0.01 ***	0.01 ***	0.00 ***	0.00 ***
Dummies year					
2012	0.03 ***	-0.03 ***	-0.01 ***	-0.03 ***	-0.01 **
2014	-0.01 *	-0.03 ***	-0.01	-0.02 ***	-0.02 ***
Constant	0.42 ***	0.15 ***	-0.05 **	0.18 ***	0.14 ***
R2	0.05	0.08	0.12	0.06	0.02
Observations	25,922	25,922	25,922	25,922	25,922

Note: Income, consumption and assets are in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

More educated people spend more on education and leisure, transport and communications and other daily necessities, though less on food and healthcare. Although the coefficients on the education variable (the average number of years of education of household members) are significant at the 1% level in these three regressions, the size of the coefficients is very small, indicating only a very limited impact of education on consumption in those categories.

Families with a higher share of smaller children spend more on education and leisure and healthcare and less on transport and communications and other daily necessities. A greater share of youth in the family also leads to lower spending on these latter three categories (as well as food), and higher spending on education and leisure. A greater share of older people in the family reduces spending on food and transport and communications, but increases spending on healthcare. These results may be related to a more frequent need for healthcare services and less need for regular commuting (for instance to work) at an older age.

Urban residents tend to direct a lower share of their consumption spending to healthcare, education and leisure, transport and communications and other daily necessities than rural ones indicating both a

more developed and generous social security system and still much higher incomes in cities. In contrast, a greater share goes to food, likely because more options are available for eating out and delivery services and there is a greater choice of food items in shops in urban areas.

Migrants tend to direct a lower share of their consumption spending to healthcare, education and leisure, and transport and communications than rural residents, indicating higher incomes and more and better availability of public goods and services in cities compared to the countryside. Just like urban residents, migrants also spend a greater share on food as in cities there are more options and they earn higher wages.

How do household features affect the spending habits of the different deciles?

To get further insights into household consumption, the paper examined the determinants of spending in the selected categories by decile. Here the household deciles are defined for the consumption variable. As above, cross-section analyses were conducted using the 2010, 2012 and 2014 data separately, followed by analyses of the stacked dataset of 2010-12-14 (Tables 7 and A.6.-A.8). The lowest-spending group serves as a base for comparison for the other deciles and is therefore dropped.

The results of the stacked 2010-12-14 analyses show that being in the lower-spending deciles boosts spending on food relative to the lowest decile, though when moving up the deciles, the coefficient loses significance, switches sign and for the most affluent decile it turns negative. While it is clear why the highest-spending decile spends a lower share on food than the lowest decile, as they may spend more on other, more pricey but not vital activities such as leisure, sports or travel, the observation that from the second to the 7th decile people spend a greater share on food than the lowest decile may indicate that food can be a major driver of spending as people can afford to spend more. Gale and Huang (2007) found earlier that top-earning households reached a point where the income elasticity of demand for quantity of most foods is near zero. Higher earners instead purchase more expensive foods, which has led to an increasingly segmented food market.

In all deciles (except the first one), people spend more on education and leisure than the first decile. In contrast, people spend less on transport and communication than the lowest decile in all other deciles. These seemingly puzzling opposite signs on the coefficients may be related to the standard types of services like transport and communication on the one hand and highly differentiable goods and services such as food, education and leisure on the other. When people spend a greater share of their overall consumption on food, education or leisure, they do not necessarily buy more of those goods and services, but more likely higher quality, which costs more. Indeed, in the retail food sector, it has been mainly the richer households that have been the major driver of demand (Gale and Huang, 2007). In addition to food, education and leisure also tend to be major drivers of consumption spending. There are relatively fewer options to spend more on transport and communication by purchasing better quality services. Buying a car, for instance, would not be categorised in the CFPS survey as consumption-type spending and the price difference between transportation options in most cases is smaller than between catering outlets, education services or leisure facilities.

Higher incomes do not appear to have a big impact on the demand for healthcare services. Only the highest two deciles spend a significantly greater share on healthcare than the lowest decile. This may be explained by consumption of different quality of goods and services by the most affluent people, for instance buying imported goods or receiving healthcare treatment abroad. Zhou et al. (2011) find a greater income elasticity of demand for reimbursed services than for uninsured services in rural China where the New Cooperative Medical Scheme, which is a partial insurance, was introduced in 2004.

From the sixth decile upwards, people spend a greater share on other daily necessities than the lowest decile, while the spending behaviour of the second- to fifth deciles does not differ significantly from that of the lowest decile.

More educated people spend a smaller share on food and healthcare, but a greater share on education and leisure and transport and communications. This pattern may be related to preferences of such people for their children to have better education and to be more cautious in spending on food or healthcare. Older people spend more on healthcare and food and less on transport and communication and other daily necessities. A higher old-age ratio also makes families spend a greater share of their consumption spending on healthcare, though a smaller share on food and transport and communications. Families with more children and youth direct a greater share of their consumption to education and leisure and the coefficients are relatively large. More children and youth are associated with lower spending shares in almost all other categories.

The coefficient for the urban dummy is negative in the healthcare, education and leisure, transport and communications and other daily necessities equations, indicating that urban residence has an impact beyond spending capacity on how much of their consumption households direct to those categories. That is, urbanites spend a lower share on healthcare, for instance, not only because they earn more, but also because they have better health insurance. Migrants spend a smaller share on healthcare and education and leisure but a greater share on food than rural residents.

Table 7. Determinants of spending habit by decile, 2010-14

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Consumption decile					
2	0.03 ***	-0.01	0.01 ***	-0.01 ***	0.00
3	0.03 ***	-0.01	0.02 ***	-0.01 ***	0.00
4	0.03 ***	-0.01	0.03 ***	-0.02 ***	0.00
5	0.03 ***	-0.01 *	0.03 ***	-0.02 ***	0.00
6	0.02 ***	-0.01	0.04 ***	-0.02 ***	0.01 *
7	0.02 *	-0.01	0.04 ***	-0.02 ***	0.01 **
8	0.01	0.00	0.03 ***	-0.03 ***	0.02 ***
9	-0.01	0.02 *	0.03 ***	-0.03 ***	0.03 ***
10	-0.11 ***	0.03 ***	0.02 ***	-0.03 ***	0.09 ***
Status					
Migrant	0.02 ***	-0.02 ***	-0.01 ***	0.00	0.00
Urban	0.07 ***	-0.03 ***	-0.02 ***	-0.01 *	-0.02 ***
Child ratio	0.02	-0.03 ***	0.19 ***	-0.08 ***	-0.03 ***
Youth ratio	-0.06 **	-0.04 ***	0.21 ***	-0.03 ***	-0.04 ***
Olds ratio	-0.01 *	0.05 ***	-0.01	-0.02 ***	-0.00
Age	0.00 ***	0.00 ***	0.00	-0.00 ***	-0.00 ***
Education	-0.01 ***	-0.01 ***	0.01 ***	0.00 ***	0.00
Dummies year					
2012	0.03 ***	-0.03 ***	-0.01 ***	-0.03 ***	-0.01 *
2014	-0.02 *	-0.03 ***	-0.01	-0.02 ***	-0.01 ***
Constant	0.38 ***	0.16 ***	-0.07 ***	0.19 ***	0.15 ***
R2	0.08	0.09	0.13	0.07	0.05
Observations	25,922	25,922	25,922	25,922	25,922

Note: Income, consumption and assets are in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

Wrapping up – inference from micro-data analysis points towards further rebalancing

This paper investigated the impact of urbanisation on consumption, i.e. migrating to cities for work by rural households and obtaining an urban *hukou* by migrants who already reside in cities. While representativeness of migrants in the dataset may be an issue, the observed increase in consumption as a result of “upgrading” the *hukou* status suggests that the large-scale planned move of people up the residential ladder will likely result in increased consumption and thus contribute to rebalancing the economy. Cross-section analysis also showed that a higher residential status is associated with greater consumption. A simple back-of-the-envelope calculation – using the shares of urban-migrant-rural households in 2014 and the obtained coefficients capturing the impact of moving up the “residential ladder” – shows that the planned urbanisation move would boost overall household consumption by close to 11%. Rural people’s move to cities would contribute by over 3%, while the change of residential status for migrant workers to urban *hukou* would account for the greater part, nearly 8%. This highlights the importance of granting equal rights for migrant workers in cities in driving overall consumption and rebalancing the economy.

The major results of the analysis are summarised in Table 8. Increased income and longer time in education, which are part of the “upgrading” package, will contribute to rebalancing, but a higher share of children in the family discourages consumption likely owing to the need to save for their education. The analysis also confirmed the spending burden of education that children, in particular between the ages of 16 and 25, impose on the family. Furthermore, urban lifestyles will bring about a change in consumption patterns, not only because urbanites have higher spending capacity but also because they enjoy greater social security benefits and access to higher quality public services.

Table 8. Summary of results, 2010-14

	Change in consumption	Consumption	Consumption of:				
			Food	Healthcare	Education and leisure	Transport and communication	Daily expenses
Rural-migrant	0.28 ***						
Migrant-urban	0.27 ***						
Urban-migrant	0.32 ***						
Status							
Migrant		0.24 ***	0.01 **	-0.01 ***	-0.01 **	-0.00 *	0.00
Urban		0.50 ***	0.05 ***	-0.02 ***	-0.01 ***	-0.01 ***	-0.01 **
Kids ratio		-0.18 ***	0.03	-0.04 ***	0.18 ***	-0.08 ***	-0.04 ***
Teens ratio		-0.12 **	-0.05 *	-0.04 ***	0.22 ***	-0.03 ***	-0.05 ***
Olds ratio		0.01	-0.02 **	0.05 ***	-0.01	-0.02 ***	-0.00
Age		0.00	0.00 ***	0.00 ***	0.00	-0.00 ***	-0.00 ***
Education		0.06 ***	-0.01 ***	-0.01 ***	0.01 ***	0.00 ***	0.00 ***

Note: Consumption, age and education are expressed as household per capita averages, change in consumption is in log differences, consumption and its sub-components are in logarithms. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

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Table A.1. Consumption patterns of households by decile, 2010

CNY in current prices unless otherwise indicated

Deciles (2010)	1	2	3	4	5	6	7	8	9	10	Total
Income	3,038	4,099	4,637	5,075	6,127	7,398	8,673	11,403	14,267	25,669	9,035
Consumption expenditure	1,073	1,976	2,678	3,401	4,228	5,208	6,429	8,189	11,108	23,207	6,746
Assets	26,322	36,763	31,392	34,312	43,779	52,020	70,669	99,277	164,812	283,792	84,277
Consumption by items:											
Food	516	920	1,187	1,495	1,810	2,170	2,516	3,192	4,296	6,542	2,464
Healthcare	146	275	360	457	569	649	814	1,012	1,479	3,949	970
Clothing	61	103	136	149	193	222	293	374	492	999	302
Housing	44	76	130	156	218	261	381	497	711	1,779	425
Other daily expenses	107	200	280	340	459	513	694	900	1,171	3,081	774
Transport and communications	114	224	312	401	515	629	746	944	1,297	2,910	809
Education and leisure	69	146	229	338	399	662	833	1,074	1,426	2,722	789
Other	17	32	45	64	66	102	153	196	237	1,226	214
Family size (number of persons)	4.9	4.5	4.4	4.2	4.1	3.9	3.7	3.4	3.2	2.9	3.9
Age (years)	38.2	37.3	37.0	38.6	38.6	39.7	39.4	40.7	42.8	43.6	39.6
Years in education	5.8	6.3	6.7	6.7	7.0	7.4	7.8	8.4	9.1	9.9	7.5
Child ratio (<16 / hhd size)	0.20	0.19	0.19	0.17	0.17	0.13	0.14	0.12	0.10	0.09	0.15
Youth ratio (16-25 / hhd size)	0.13	0.14	0.14	0.13	0.14	0.16	0.15	0.13	0.13	0.12	0.14
Old ratio (>64 / hhd size)	0.14	0.10	0.09	0.11	0.10	0.11	0.10	0.11	0.13	0.15	0.11
Share of consumption:											
Food	48.1	46.5	44.3	44.0	42.8	41.7	39.1	39.0	38.7	28.2	36.5
Healthcare	13.6	13.9	13.5	13.4	13.5	12.5	12.7	12.4	13.3	17.0	14.4
Clothing	5.7	5.2	5.1	4.4	4.6	4.3	4.6	4.6	4.4	4.3	4.5
Housing	4.1	3.9	4.8	4.6	5.2	5.0	5.9	6.1	6.4	7.7	6.3
Other daily expenses	9.9	10.1	10.4	10.0	10.9	9.8	10.8	11.0	10.5	13.3	11.5
Transport and communications	10.6	11.3	11.7	11.8	12.2	12.1	11.6	11.5	11.7	12.5	12.0
Education and leisure	6.4	7.4	8.5	9.9	9.4	12.7	13.0	13.1	12.8	11.7	11.7
Other	1.5	1.6	1.7	1.9	1.6	2.0	2.4	2.4	2.1	5.3	3.2

Note: Deciles are defined for consumption.

Source: OECD calculations using the China Family Panel Studies database.

Table A.2. Consumption patterns of households by decile, 2012

CNY in current prices unless otherwise indicated

Deciles (2012)	1	2	3	4	5	6	7	8	9	10	Total
Income	6,278	6,715	7,105	7,614	8,876	9,036	10,831	13,093	17,935	26,093	11,358
Consumption expenditure	1,546	2,854	3,968	5,063	6,276	7,713	9,518	12,109	16,645	36,002	10,169
Assets	29,603	36,847	46,020	52,752	60,865	72,029	96,014	127,469	187,226	331,672	104,050
Consumption by items:											
Food	631	1,316	1,824	2,380	2,929	3,661	4,482	5,730	7,406	9,888	4,025
Healthcare	210	328	435	557	656	792	896	1,262	1,782	3,603	1,052
Clothing	120	190	252	291	359	419	462	620	808	1,678	520
Housing	177	265	346	408	469	574	702	907	1,131	1,546	653
Other daily expenses	120	213	310	423	522	620	810	1,065	1,736	10,595	1,641
Transport and communication	167	263	371	428	524	629	838	987	1,363	2,656	823
Education and leisure	93	210	321	425	614	757	965	1,077	1,607	3,507	958
Other	28	68	108	152	203	261	362	463	813	2,529	499
Family size (number of persons)	5.0	4.7	4.5	4.5	4.2	3.9	3.8	3.5	3.3	3.2	4.1
Age (years)	41.4	39.9	40.7	40.2	40.3	41.0	41.7	42.8	43.9	42.5	41.4
Years in education	6.7	6.8	7.2	7.4	7.7	8.0	8.4	8.9	9.2	10.2	8.0
Child ratio (<16 / hhd size)	0.14	0.16	0.13	0.13	0.14	0.12	0.11	0.09	0.09	0.09	0.12
Youth ratio (16-25 / hhd size)	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.14	0.12	0.11	0.13
Old ratio (>64 / hhd size)	0.16	0.14	0.12	0.12	0.12	0.13	0.13	0.14	0.15	0.13	0.13
Share of consumption:											
Food	40.8	46.1	46.0	47.0	46.7	47.5	47.1	47.3	44.5	27.5	39.6
Healthcare	13.6	11.5	11.0	11.0	10.5	10.3	9.4	10.4	10.7	10.0	10.3
Clothing	7.7	6.7	6.3	5.7	5.7	5.4	4.9	5.1	4.9	4.7	5.1
Housing	11.5	9.3	8.7	8.1	7.5	7.4	7.4	7.5	6.8	4.3	6.4
Other daily expenses	7.7	7.5	7.8	8.4	8.3	8.0	8.5	8.8	10.4	29.4	16.1
Transport and communication	10.8	9.2	9.4	8.4	8.4	8.2	8.8	8.1	8.2	7.4	8.1
Education and leisure	6.0	7.4	8.1	8.4	9.8	9.8	10.1	8.9	9.7	9.7	9.4
Other	1.8	2.4	2.7	3.0	3.2	3.4	3.8	3.8	4.9	7.0	4.9

Note: Deciles are defined for consumption.

Source: OECD calculations using the China Family Panel Studies database.

Table A.3. Determinants of spending by category, 2010

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Status					
Migrant	0.01	-0.01 **	-0.01	0.00	0.00
Urban	0.04 ***	-0.02 **	-0.03 ***	-0.01 **	0.00
Child ratio	0.18 ***	-0.02	0.03 *	-0.10 ***	-0.03 *
Youth ratio	-0.03	-0.05 **	0.21 ***	-0.05 ***	-0.05 ***
Olds ratio	-0.04 **	0.04 **	0.01	-0.01 ***	0.00
Age	0.00 ***	0.00 ***	-0.00 ***	-0.00 ***	-0.00 ***
Education	-0.01 ***	-0.01 ***	0.02 ***	0.00 ***	0.00 ***
Dummies year					
2012					
2014					
Constant	0.35 ***	0.16 ***	0.00	0.20 ***	0.13 ***
R2	0.07	0.07	0.14	0.04	0.01
Observations	8,348	8,348	8,348	8,348	8,348

Note: Consumption is in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

Table A.4. Determinants of spending by category, 2012

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Status					
Migrant	-0.01	-0.01 **	0.00	0.00	0.00
Urban	0.00	-0.02 **	0.00	0.00	-0.01 **
Child ratio	-0.06	-0.05 ***	0.25 ***	-0.07 ***	-0.04
Youth ratio	-0.08 ***	-0.03 *	0.23 ***	-0.03 **	-0.04 ***
Olds ratio	-0.03 **	0.06 ***	-0.01	-0.01 ***	-0.00
Age	0.00	0.00 **	0.00 **	-0.00 ***	-0.00 ***
Education	-0.02 ***	-0.01 ***	0.01 ***	0.00 ***	0.01 ***
Dummies year					
2012					
2014					
Constant	0.55 ***	0.12 ***	-0.11 ***	0.14 ***	0.12 ***
R2	0.05	0.07	0.14	0.04	0.02
Observations	8,522	8,522	8,522	8,522	8,522

Note: Consumption is in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

Table A.5. Determinants of spending by category, 2014

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Status					
Migrant	0.05 ***	-0.02 ***	-0.01 ***	-0.02 ***	0.00
Urban	0.11 ***	-0.03 ***	-0.01 **	-0.03 ***	-0.02 ***
Child ratio	-0.01	-0.03 **	0.27 ***	-0.09 ***	-0.04 **
Youth ratio	-0.02	-0.04 ***	0.18 ***	-0.03 ***	-0.05 ***
Olds ratio	0.01	0.06 ***	-0.01	-0.03 ***	-0.00
Age	0.00 **	0.00 ***	0.00 ***	-0.00 ***	-0.00 ***
Education	-0.01 ***	-0.01 ***	0.01 ***	-0.00	0.00 ***
Dummies year					
2012					
2014					
Constant	0.35 ***	0.11 ***	-0.04 ***	0.18 ***	0.14 ***
R2	0.06	0.09	0.11	0.07	0.02
Observations	9,052	9,052	9,052	9,052	9,052

Note: Consumption is in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

Table A.6. Determinants of spending shares by decile, 2010

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Consumption decile					
2	0.01	0.01	0.00	0.00	-0.01
3	-0.01	0.01	0.01 **	0.00	0.00
4	-0.02	0.01	0.03 ***	0.01	-0.01
5	-0.03	0.02	0.02 ***	0.01	0.00
6	-0.04 *	0.01	0.05 ***	0.01	-0.01 **
7	-0.07 ***	0.02	0.05 ***	0.00	0.00
8	-0.08 ***	0.03 *	0.05 ***	0.01	0.00
9	-0.09 ***	0.05 **	0.05 ***	0.01	-0.01
10	-0.16 ***	0.09 ***	0.03 ***	0.02 *	0.01
Status					
Migrant	0.02 *	-0.02 ***	-0.01 **	-0.00	0.00
Urban	0.08 ***	-0.03 ***	-0.04 ***	-0.01 ***	0.00
Child ratio	0.14 ***	0.00	0.05 **	-0.10 ***	-0.03
Youth ratio	-0.05 *	-0.03 *	0.21 ***	-0.05 ***	-0.04 ***
Olds ratio	-0.04 **	0.04 *	0.01 **	-0.01 ***	0.00
Age	0.00 ***	0.00 ***	-0.00 ***	-0.00 ***	-0.00 ***
Education	-0.01 ***	-0.01 ***	0.01 ***	0.00 ***	0.00 ***
Dummies year					
2012					
2014					
Constant	0.36 ***	0.16 ***	-0.02	0.20 ***	0.13 ***
R2	0.11	0.08	0.15	0.05	0.01
Observations	8,348	8,348	8,348	8,348	8,348

Note: Consumption is in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

Table A.7. Determinants of spending shares by decile, 2012

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Consumption decile					
2	0.07 ***	-0.02 **	0.01	-0.02 ***	-0.00
3	0.08 ***	-0.02 ***	0.02 ***	-0.02 ***	0.00
4	0.09 ***	-0.02 **	0.02 ***	-0.03 ***	0.01
5	0.09 ***	-0.02 ***	0.03 ***	-0.04 ***	0.01
6	0.10 ***	-0.02 ***	0.03 ***	-0.04 ***	0.01
7	0.10 ***	-0.03 ***	0.03 ***	-0.04 ***	0.01 **
8	0.11 ***	-0.02 **	0.01 ***	-0.04 ***	0.02 **
9	0.08 ***	-0.01	0.02 ***	-0.04 ***	0.04 ***
10	-0.03	0.00	0.02 ***	-0.05 ***	0.15 ***
Status					
Migrant	-0.02	-0.01 **	0.00	0.00	-0.00
Urban	0.01	-0.02 **	-0.01	0.01	-0.04 ***
Child ratio	-0.07	-0.05 ***	0.25 ***	-0.07 ***	-0.03
Youth ratio	-0.09 ***	-0.03 *	0.24 ***	-0.03 ***	-0.03 **
Olds ratio	-0.03 **	0.06 ***	-0.01	-0.02 ***	-0.00
Age	0.00	0.00 **	0.00 **	-0.00 ***	-0.00 ***
Education	-0.01 ***	-0.01 ***	0.01 ***	0.00 ***	0.00*
Dummies year					
2012					
2014					
Constant	0.48 ***	0.14 ***	-0.12 ***	0.16 ***	0.13 ***
R2	0.08	0.08	0.15	0.06	0.10
Observations	8,522	8,522	8,522	8,522	8,522

Note: Consumption is in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.

Table A.8. Determinants of spending shares by decile, 2014

As a share of total consumption expenditure	Food	Healthcare	Education and leisure	Transport and communication	Other daily expenses
Consumption decile					
2	0.02 ***	-0.01	0.02 ***	-0.01 **	0.00
3	0.02 **	-0.01	0.02 ***	-0.02 **	0.01 *
4	0.02 **	-0.01	0.03 ***	-0.02 ***	0.00
5	0.03 ***	-0.02 ***	0.03 ***	-0.03 ***	0.00
6	0.01	0.00	0.04 ***	-0.03 ***	0.02 ***
7	0.01	-0.01	0.02 **	-0.03 ***	0.02 ***
8	0.00	-0.01	0.02 **	-0.04 ***	0.03 ***
9	-0.05 **	0.03*	0.01 **	-0.04 ***	0.04 ***
10	-0.16 ***	0.02	0.01	-0.06 ***	0.11 ***
Status					
Migrant	0.06 ***	-0.02 ***	-0.01 ***	-0.01 ***	-0.00
Urban	0.13 ***	-0.04 ***	-0.01 **	-0.01 ***	-0.04 ***
Child ratio	-0.01	-0.04 **	0.26 ***	-0.09 ***	-0.04 **
Youth ratio	-0.02	-0.04 ***	0.18 ***	-0.03 ***	-0.05 ***
Olds ratio	0.02	0.06 ***	-0.01	-0.03 ***	-0.01
Age	0.00 **	0.00 ***	0.00 ***	-0.00 ***	-0.00 ***
Education	-0.00	-0.01 ***	0.01 ***	0.00	-0.00
Dummies year					
2012					
2014					
Constant	0.31 ***	0.12 ***	-0.07 ***	0.19 ***	0.15 ***
R2	0.12	0.10	0.12	0.09	0.07
Observations	9,052	9,052	9,052	9,052	9,052

Note: Consumption is in logarithms and on a per capita basis. OLS is used with year and residential status dummies with robust standard errors clustered at the province level. * indicate p values, * significance at the 10%, ** at the 5% and *** at the 1% level. A household is considered urban if the majority of its members reside in cities and have urban (non-agricultural) *hukou*, migrant if the majority of the family members reside in cities but have rural (agricultural) *hukou* and rural if the majority of the members reside in rural areas with a rural (agricultural) *hukou*.

Source: OECD estimations using the China Family Panel Studies database.