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## **The Main Approach of Proposed Integrated Household Survey of China**

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### **ABSTRACT**

Due to the impact of Chinese urban-rural dual structure, China's household surveys have been split for the urban area and the rural area, in which data of disposable income of urban

residents was released for the urban area and data of net income of rural residents was released for the rural area. Up to now, there is no official income and consumption data for all the Chinese residents. Moreover, with the rapid urbanization and large-scale migration of rural labors from rural to urban in China, the coverage issue of floating population posed a new challenge for on-going Chinese urban and rural household surveys. Therefore, establishing the integrated household survey is very necessary and urgent for China.

The proposed content of Chinese reform on the integrated household survey will mainly include as follows: (1) adopting united sampling frame and united sampling method to select the samples of urban area and rural area, so as to assure both exhaustive and exclusive sample coverage especially floating population coverage, and utilizing united sample rotation period to rotate sample. (2) designing united indicator system conformed to international standards, so as to obtain the data on the disposable income and consumption of all the residents including both the urban and the rural. (3) releasing income and consumption data of all the residents and corresponding data by urban residents and rural residents.

At the same time, we could expect that there will appear the break of data series after the implementation of integrated household survey due to the impact of the changes of definition of urban and rural itself, definition of disposable income, and sample coverage. So it will be a large challenge to reconcile new data with historical data for Chinese household surveys.

**Keywords:** Household survey, China, disposable income

China is one of the few countries in which rural and urban household surveys were separately implemented. Urban household survey and rural household survey not only differed in the survey scope, but also had some differences in sampling design, the definition of main concepts, data processing and etc. For the data release, data of disposable income of urban residents was released for the urban area and data of net income of rural residents was released for the rural area, both of which differed with international standard on income concepts to some extent. Up to now, there is no official income and consumption data for all the Chinese residents including both urban residents and rural residents.

Moreover, with the rapid economic development and accelerated urbanization process of China, on-going Chinese urban and rural household surveys also faced some new challenges such as coverage of huge floating population and increase of household non-response. Therefore, establishing the integrated household survey is very necessary and urgent for China. Since 2000, by targeting at the integration of urban and rural household survey and absorbing the experience of relevant countries, National Bureau of Statistics of China has started the reform of China's household survey system, and has achieved some outcomes in unifying sampling frame and sampling design, optimizing the definition of income and consumption indicators, and improving data collection and processing methods.

This main content of this paper will include three parts. The first part will illustrate the background of China's integrated household survey, including the brief introduction of on-going household survey and rural household survey, and main work done on the reform of integrated household survey. The second will introduce the main approach which is proposed to be adopted in the integrated household survey, and their advantages and disadvantages. The final part will discuss the challenges and work need to be done further for the application of proposed approach of integrated household survey.

## **1. Background**

China started its rural household survey in 1954 and the urban household survey in 1955. Up to now, China has formed an urban/rural household income and expenditure survey system characterized by relatively sound survey organization, relatively standardized survey method, relatively timely data release, and the user needs being basically met. National Bureau of Statistics of China (NBS) quarterly releases main data including urban and rural residents' cash income and consumption, employment of rural migrant workers and so on. Annually

NBS publishes detailed information on the urban and rural residents' living and their breakdown by province and by various income levels, in which the core indicators are the disposable income and consumption expenditure of urban residents, and net income and consumption expenditure of rural residents. Figure 1 shows the disposable income of urban residents and net income of rural residents in China from 1978 to 2010.

The samples of China's rural and urban household surveys are designed and selected according to the principle of meeting the representativeness of major income and consumption indicators of urban and rural residents at the national and provincial levels. The rural household survey selected the sample of 74,000 households, over 7000 villages and 896 surveyed counties among 31 provinces in China according to the stratified, multi-stage, PPS sampling method. The urban household survey obtained the sample of 66,000 households, over 6000 surveyed communities and 476 surveyed cities/counties among 31 provinces in China according to the stratified, two-phase, PPS sampling method.

China's urban/rural household surveys collect data through the combination of diary-keeping and questionnaire interview. The surveys not only collect income and consumption through diary-keeping, but also collect other basic household information through questionnaire, including population and employment information of household members, housing and consumer durables owned, savings and loans of household and etc. Apart from the above, rural household survey additionally includes the information of rural migrant workers, production, selling and self-production for own consumption of main family-operated agricultural products, inputs of agricultural production and agricultural technology application, and the development of village/communities and etc. In poor areas, rural household survey also collect the information on the participation in poverty alleviation program for both village level and household level, and specific demand of households on governmental poverty alleviation program.

However, with the rapid economic growth and dramatic adjustment of social structure, China's on-going urban/rural household surveys are more and more difficult to meet the requirements of Chinese government and the society.

Firstly, due to separate surveys, there was some difference in the definition of income and consumption indicators for urban residents and rural residents, and corresponding data results are not entirely comparable. As described above, up to now, there is no official income and consumption data for all the Chinese residents including both urban residents and rural

residents. With Chinese government's promotion of coordinated economic and social development strategy for urban areas and rural areas, it is urgent for Chinese statistical department to provide income and consumption data for all China's residents and its breakdown by urban/rural that could be entirely comparable.

Secondly, with the acceleration of China's industrialization and urbanization, the number of rural migrant workers has increased dramatically. The sixth national census of China showed that, in 2010 China had 150 million persons working outside in the long term with Hukou (household registration status) in rural areas. Some migrants have all their family members working and living in urban areas for long-term, but they are highly mobile and have no stable residential places. Some migrants have their wives or children still living in rural areas, and send or bring back home larger part of income received from the work in urban areas. In this circumstance, it is highly difficult for the survey to cover the floating population and accurately obtain their income and consumption information.

Thirdly, after 30 years of reform and opening up, the living of China's residents has undergone tremendous changes. The public pays more attention to protect individual information, leading to increased difficulty of obtaining high-quality raw material on residents' income and consumption. In particular, the proportion of the total income for high-income families within the whole society is bigger and bigger, and they exert increasingly large impacts on the disposable income of residents. But those families generally refuse to accept the survey. These are the problems that China's household survey needs to address urgently.

In order to deal with the various challenges faced by China's household surveys, NBS has started the reform of China's household survey system with the target at the integration of urban and rural household survey since the new century. As a preparation for the design of integrated household survey, NBS and Statistics Canada launched a 10-year cooperation project on the field of household survey in 2000. Through this project, referring to international experience and fully considering the actual social and economic development of China, NBS and Canadian experts designed the scheme of integrated household survey, conducted a pilot survey in four counties, that is, Shunyi District of Beijing, Xiaoshan District of Zhejiang Province, Huixian City of Henan Province, and Qionglai City of Sichuan Province from 2008, involving a total of about 3,000 households, with the duration of 5 quarters. The pilot adopted unified sampling, unified concept, unified data collection methods,

and the unified data processing to collect the income and expenditure data of the whole residents including both urban residents and rural residents. In addition, there launched a Mini-survey on the non-conventional dwellings in Shunyi District of Beijing as a complement, so as to better cover the migrant workers living in the non-conventional dwellings. Through elaborate evaluation, we think that the approach of the pilot survey is generally feasible, and based on that, NBS further made lots of improvements and designed the scheme of integrated household survey which will be implemented across the whole China in 2013.

## **2. Main Approach of Proposed Integrated Household Survey**

Overall, the design of proposed integrated household survey is accordance with the following three principles.

Firstly, survey outcomes should sufficiently meet key user needs. Household survey is an important channel for reflecting people's livelihood, an important basis for policy-making, and an important component of national statistical system. Integrated household survey should fully meet data needs of government departments, research institutions, the public and NBS internal users (including consumer price index CPI and system of national accounts SNA). In particular, in the China's rapid urbanization process, different users have various needs on the scope of urban/rural areas and population range. In the context of improving income distribution and building a harmonious society, the government and the public pay particular attention to household data.

Secondly, the core concepts should be consistent with international standards. Many developed countries had a long history on household surveys, and accumulated lots of mature practices on the classification and definition of indicators. In the integrated household survey, the core income and consumption expenditure indicators not only should be docked with the international standards in the name of indicators, but also should be consistent with international standards in the basic classification and connotation. Based on that, the core income and consumption expenditure indicators could not only be comparable for the urban area and rural area, but also could be completely unified for the indicators of the urban area and rural area, so as to achieve unified data collection, unified data processing and unified data dissemination.

Thirdly, survey scheme should adapt to China's national conditions. The scheme design of integrated household survey should be easy to understand, and adapt to characteristics of

survey respondents, survey agency on the grassroots level, and survey environment in China.

## **2.1 Sampling Frame**

The most important point of united sampling for integrated household survey is to use united sampling frame. The data source for the sampling frame of integrated household survey should meet three requirements as followed.

- (i) The sampling frame should achieve a good population and geographical coverage. That is, the sampling frame should be both exhaustive and exclusive.
- (ii) The sampling frame should clearly identify “urban area” and “rural area”. For the integrated household survey, integration or unification is very significant, but the dimension of urban/rural is still important for China with a big gap between the urban and the rural.
- (iii) The sampling frame should provide necessary supplementary information for the sampling design of integrated household survey, such as population counts and income-relevant information, and enable efficient sampling design including stratification, sample allocation and sampling at the appropriate unit level.

Based on these three requirements, the sixth national population census data of China is an ideal data source for sampling frame of integrated household survey. China conducted the sixth population census in 2010. Every resident living in China is required to report name, gender, age, nationality, household registration, education, occupation, job, migration, marriage status, birth, and death. The sixth census also covers information of housing, social security and income, which is reported by 10% persons through a longer form. The materials at enumeration area level (equivalent to the village committee of rural area or the neighborhood committee of urban area) and enumeration small area level (generally, one enumeration area could include several enumeration small areas) derived from the sixth census could provide complete and sufficient information for the sampling of integrated household survey, so as to achieve the exclusive and exhaustive population coverage.

## **2.2 The definition of urban/rural**

For statistical use in China, there are mainly two types of definition for urban/rural.

### **2.2.1 The first definition based on Hukou (household registration status)**

The first definition is closely relevant with China's Hukou-related policy. Hukou is kind of household registration status, and could be divided into agricultural Hukou and non-agricultural Hukou. Back at the time of planned economy, Hukou made a huge difference in terms of social security, health care, education and public housing distribution, with a clear favor for the non-agricultural Hukou holders. Nowadays, Hukou still plays an important impact for the Chinese residents. At the same time, most of rural policies such as rural health care, rural pension, rural poverty alleviation, allocation of agricultural land, subsidies on the agriculture, were only implemented for those residents with agricultural Hukou.

All the areas in China could be divided into village committees or neighborhood committees. Generally, residents of village committees own agricultural Hukou, while residents of neighborhood committees own non-agricultural Hukou. So we could define all the village committees as the rural area, while define all the neighborhood committees as the urban area.

As shown in figure 4, according to rural definition based on Hukou, in 2009, the population of rural area (that is the residents of village committees) reached 910 million persons, accounting for 68.3% of the total, while the population of urban area (that is the residents of neighborhood committees) reached 420 million persons, accounting for 31.7% of the total. For the on-going China's rural household survey, the survey scope is basically approximate with the scope of village committees. That is, the rural definition for the on-going China's rural household survey could be regarded as this first definition based on Hukou.

### **2.2.2 The second definition based on urbanization process**

The second definition is closely relevant with China's actual urbanization process, and the specific identification criteria is based on whether or not connect with actual construction. The actual construction refer to completed or under-construction public facilities, residential facilities and other facilities. To be noted, simply connecting with water and power lines, railways, highways, roads can not be identified with "connecting with actual construction". Based on this identification criteria, National Bureau of Statistics of China classified all the village committees/ neighborhood committees into urban area or rural area.

As shown in figure 5, according to rural definition based on urbanization process, in 2009, the population of rural area covers 710 million persons, accounting for 53.3% of the total, while the population of urban area reached 620 million persons, accounting for 46.7% of the total.

Through elaborate scheme design, the integrated household survey will support two types of

rural definition. To be noted, Based on different rural definition, the income of China's rural residents will differ. If adjusting the rural definition from the first definition based on Hukou to the second definition based on urbanization process, as shown in table 1, we could see that annual net income per capita for rural residents will decrease by 5.1%, in which wage income will decrease by 11.2% while net business income will increased by 1.4%.

### **2.3 The definition of income**

For the on-going household survey, net income was instituted with four income sources as followed:

- Wage income
- Net business income
- Property income
- Transfer income

Figure 2 and table 3 shows that these four income sources of China's rural residents in selected years. In 1995, the net income per capita of rural residents was 1578 RMB, in which wage income, net business income, property income and transfer income respectively accounted for 22.4%, 71.3%, 2.6%, and 3.6%. For the year of 2010, the net income per capita of rural residents reached 5919 RMB, in which wage income, net business income, property income and transfer income respectively accounted for 41.1%, 47.9%, 3.4%, and 7.7%.

For rural residents in China, net business income is still the largest income source of the total income, and net business income from farming accounts for the biggest part. On-going rural household survey also released the detailed data related with income derived form business activities. As seen from table 4, there shows the revenue, expenditure and net income of household business by industry including farming in selected years. Specifically, the net income of household business is calculated by revenue of household business subtracting expenditure of household business, tax payment and depreciation on productive fixed assets. In table 4, we can see that in 2010, net income of household business from farming reached 1723 RMB, accounting for the 60.8 of the total of net income of household business.

At the same time, there are two series of income data in the on-going rural household survey. One is income including income in kind, and another is income in cash. For the income in kind for rural residents, it will mainly involve self-production and self-consumption of

agricultural products, good and services provided by employers as part of employment package, and good and services which target towards particular groups such as poor families and is provided by governments. As shown in figure 3, it showed net income and net income in cash of China's rural residents in selected years. In 1980, the net income per capita of rural residents was 191.3 RMB, while net income in cash per capita was 94.4 RMB, accounting for 49.3% of the total net income. For the year of 2010, the net income per capita of rural residents reached 5919 RMB, while net income in cash per capita reached 5143.7 RMB, accounting for 86.9% of the total net income.

For the integrated household survey, consistent with international standards and income concept with China's urban residents, we will adjust the net income of rural residents to disposable income of rural residents. And at the same time, classification of some small income items will also be adjusted according to Canberra standard. For example, in the past, we regard the income from land expropriation compensation as the part of property income, while we will adjust the money received from land expropriation compensation as a item belonged to non-income earning. Similarly, we will adjust the classification of payment for renting farm land as operating cost for agricultural business rather than property expenditure as before, and adjust the classification of reimbursement of medical expense as negative expenditure rather than transfer income as before.

The proposed integrated household survey will also include two series of income and consumption expenditure including corresponding part in kind as well as income and consumption expenditure in cash. Specifically, the proposed integrated household survey will quarterly release cash disposable income and cash consumption expenditure data. And annually, besides cash disposable income and cash consumption expenditure data, disposable income (including income in kind) and consumption expenditure (including consumption in kind) data will also be released.

For the disposable income, it will be divided into 4 items

- Employee income
- Net business income
- Net Property income
- Net transfer income

Here, net property income is derived from property income subtracting property expenditure, while net transfer income is derived from transfer income subtracting transfer expenditure.

As shown in table 5, we can see the impact of adjustment of income concept on the income level of China's rural residents. In 2008, annual net income per capita of rural residents was 4761 RMB, while if adjusting the net income to disposable income, we can see that after adjustment, income will decrease by 5.2%.

### **3. Challenge**

If National Bureau of Statistics of China wants to smoothly transform from separate urban/rural household surveys into integrated household survey to achieve expected objectives, there are still some challenges that we will face in the future.

Firstly, in order to realize exclusive and exhaustive sample coverage, besides on-going surveys mainly on the households living in the conventional dwellings, we plan to implement survey on those large amount of migrants workers living in the non-conventional dwellings in urban areas, such as staff dormitories of factories, work sheds on the sites of real estate construction, and workplace accommodations in the integrated household survey. Although NBS conducted a mini-test on the survey of non-conventional dwellings, there still existed realistic difficulties on implementing the survey of non-conventional dwellings in the national range and combining the survey of conventional dwellings and the survey of non-conventional dwellings to obtain the income and consumption estimate for all Chinese residents.

Secondly, in the integrated household survey, unified sampling, unified data collection, unified data processing and unified data release will be adopted. However, especially for the data collection, due to large difference on the educational attainment of respondents, income sources, survey environment for the urban residents and rural residents, there need some flexibility on the specific practices within the unified data collection framework, so as to cater for the different situations. In this regard, NBS still need accumulate more experience and continuously improve the survey scheme in the future.

Thirdly, due to the relatively large change on various aspects such as the definition of rural area, definition of disposable income, and sample coverage, we could expect that there will emerge the break of statistical series for income data of China's rural residents. Thus, we will face the challenges on how to reconcile new data with historical data for China's rural

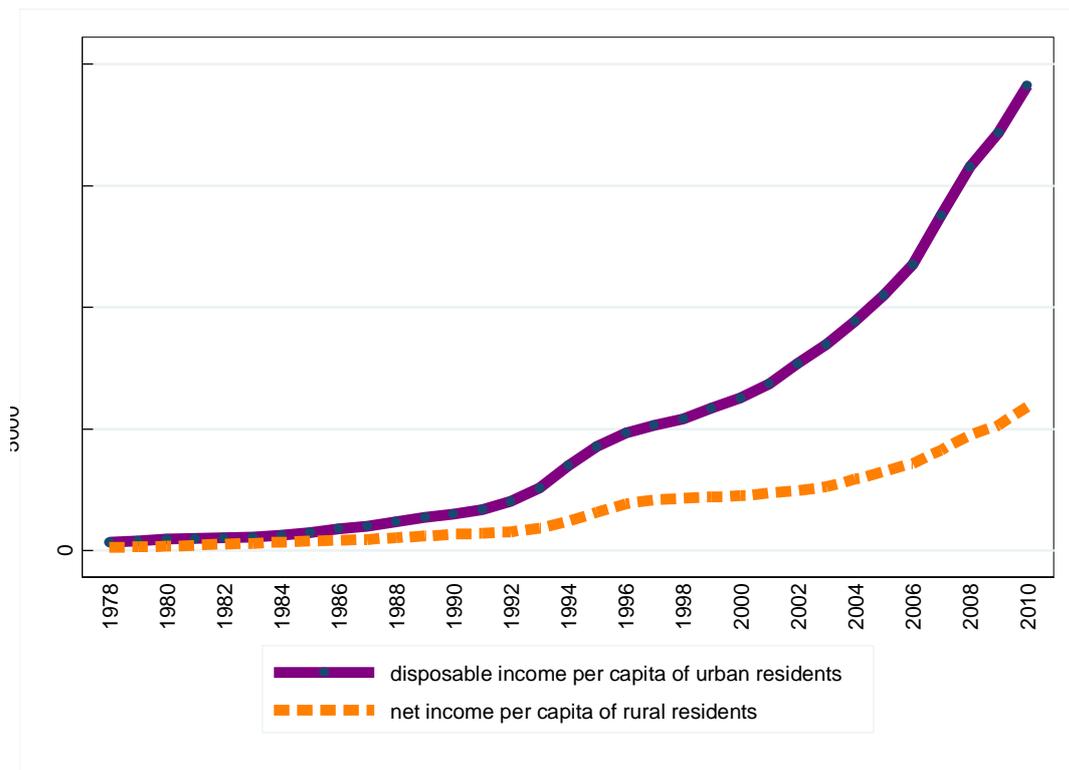
household survey and how to manage the series break for the income data of rural residents. On the one hand, we need analyze and decompose the impact of each factor such as new sampling and new concept on the income estimates, and further adjust historical data series to assure the continuity and the consistency of data series. And on the other hand, we need communicate the data users on the possible changes and their impacts in advance, so as to facilitate the smooth reform of integrated household survey.

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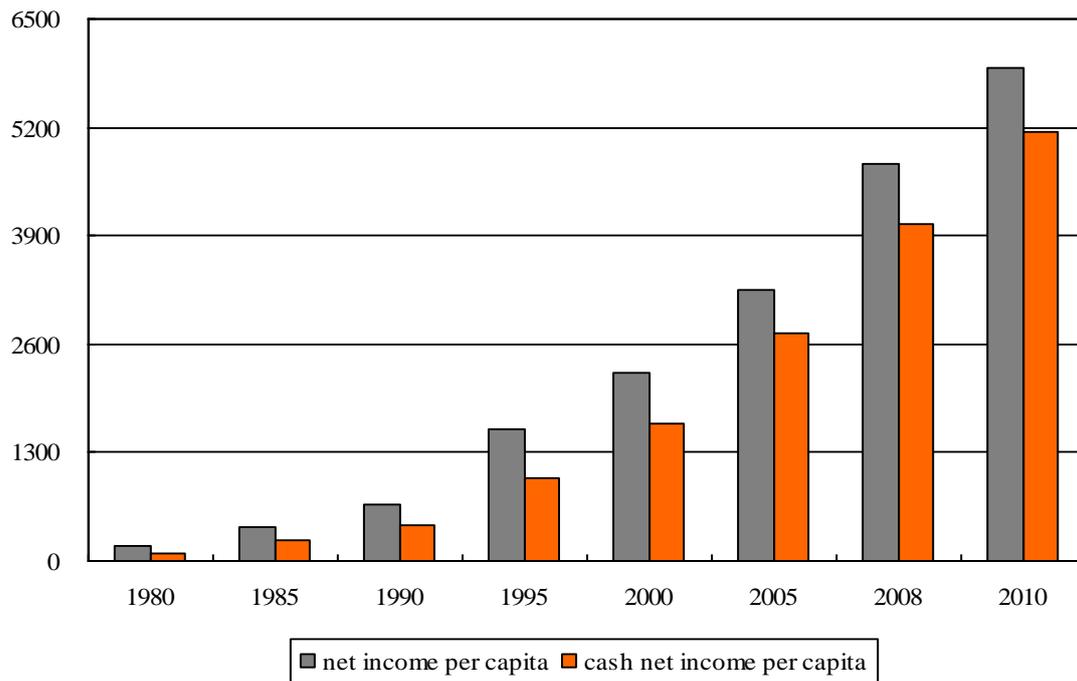
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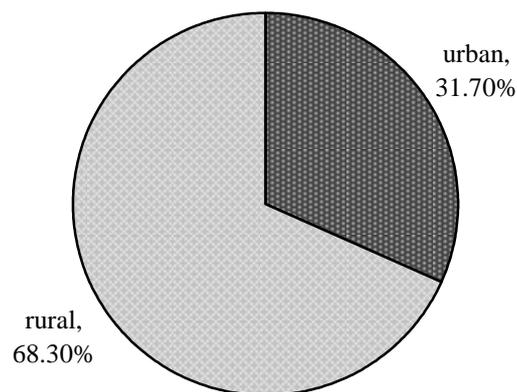
**Figure 1 Income of China’s urban residents and rural residents from 1978 to 2010, RMB**



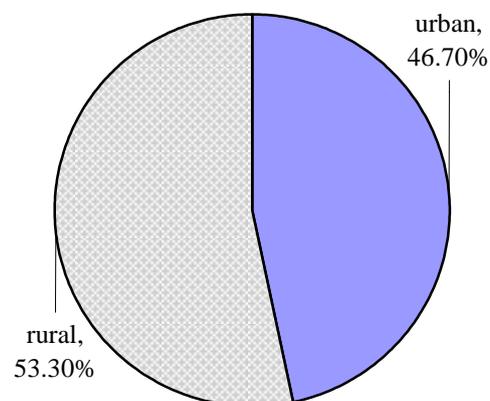
**Figure 2 Income sources of China’s rural residents in selected years, RMB**



**Figure 3 Net Income and its cash part of China's rural residents in selected years, RMB**



**Figure 4 The distribution of urban area and rural area defined based on Hukou**



**Figure 5 The distribution of urban area and rural area defined based on urbanization process**

**Table 1 The difference of net income of China's rural residents based on two definitions for the rural for the year of 2008 (unit:RMB)**

	Rural definition based on Hukou	Rural definition based on urbanization process	Change
<b>Annual Net Income Per Capita</b>	<b>4761</b>	<b>4516</b>	<b>↓ 5.1%</b>
# Wage Income	1854	1646	↓ 11.2%
# Net Business Income	2436	2470	↑ 1.4%
# Property Income	148	96	↓ 35.3%
# Transfer Income	323	304	↓ 5.9%

**Table 2 Disposable income of China's urban residents in selected years (unit:RMB)**

	1995	2000	2005	2006	2007	2008	2009	2010
Annual Total Income Per Capita	4279	6296	11321	12719	14909	17068	18858	21033
# Wage Income	3390	4481	7798	8767	10235	11299	12382	13708
# Net Business Income	73	246	680	810	941	1454	1529	1714
# Property Income	90	128	193	244	349	387	432	520
# Transfer Income	726	1441	2651	2899	3385	3928	4515	5092
<b>*Disposable Income Per Capita</b>	<b>4283</b>	<b>6280</b>	<b>10493</b>	<b>11759</b>	<b>13786</b>	<b>15781</b>	<b>17175</b>	<b>19109</b>

**Table 3 Net income of China's rural residents in selected years (unit:RMB)**

	1995	2000	2005	2006	2007	2008	2009	2010
<b>Annual Net Income Per Capita</b>	<b>1578</b>	<b>2253</b>	<b>3255</b>	<b>3587</b>	<b>4140</b>	<b>4761</b>	<b>5153</b>	<b>5919</b>
# Wage Income	354	702	1175	1375	1596	1854	2061	2431
# Net Business Income	1126	1427	1845	1931	2194	2436	2527	2833
# Property Income	41	45	88	101	128	148	167	202
# Transfer Income	57	79	147	181	222	323	398	453

**Table 4 Revenue, expenditure and net income of household business for China's rural residents in selected years (unit:RMB)**

	1985	1990	1995	2000	2005	2008	2009	2010
<b>Revenue of Household business Per capita</b>	<b>445</b>	<b>816</b>	<b>1877</b>	<b>2251</b>	<b>3164</b>	<b>4302</b>	<b>4404</b>	<b>4937</b>
I. Revenue of primary industry	401	736	1652	1811	2621	3593	3623	4046
1.Farming	283	531	1188	1232	1704	2306	2372	2728
2.Forestry	7	8	17	28	53	77	80	100
3.Animal	104	186	421	503	786	1105	1059	1099
4.Fishery	6	10	27	48	78	106	111	119
II. Revenue of secondary industry	12	26	65	134	167	225	249	280
III. Revenue of tertiary industry	32	54	160	307	376	484	532	612
<b>Expenditure of Household business Per capita</b>	<b>121</b>	<b>241</b>	<b>622</b>	<b>654</b>	<b>1190</b>	<b>1705</b>	<b>1700</b>	<b>1916</b>
I. Expenditure of primary industry	111	223	576	572	1058	1532	1512	1685
1.Farming	60	130	321	316	541	798	789	914
2.Forestry	1	1	2	4	7	10	10	12
3.Animal	48	89	242	235	477	675	665	707
4.Fishery	2	3	9	17	33	48	48	52
II. Expenditure of secondary industry	2	5	14	27	48	63	68	79
III. Expenditure of tertiary industry	9	13	32	55	84	110	120	151
<b>Net income of Household business Per capita</b>	<b>296</b>	<b>519</b>	<b>1126</b>	<b>1427</b>	<b>1845</b>	<b>2436</b>	<b>2527</b>	<b>2833</b>
I. Net income of primary industry	264	456	956	1091	1470	1946	1988	2231
1.Farming	202	345	799	834	1098	1427	1498	1723
2.Forestry	6	8	14	22	46	66	70	88
3.Animal	52	97	128	207	284	398	360	356
4.Fishery	4	7	16	27	43	55	60	64
II. Income of secondary industry	10	21	48	99	108	149	164	182
III. Net income of tertiary industry	23	41	121	237	267	341	374	420

Note: the net income of household business is calculated by the following formula. Net income of household business=Revenue of household business – Expenditure of household business – Tax payment – Depreciation on productive fixed assets. Here, the data on tax payment and depreciation on productive fixed assets is not shown in this table.

**Table 5 The impact of adjustment of income concept on the income level of China's rural residents for the year of 2008 (unit:RMB)**

Before adjustment		After adjustment		Change
<b>Annual Net Income</b>	<b>4761</b>	<b>Annual Disposable</b>	<b>4515</b>	<b>↓ 5.2%</b>
<b>Per Capita</b>		<b>Income Per Capita</b>		
1.Wage Income	1854	1. Wage Income	1854	-
2. Net Business Income	2436	2. Net Business Income	2410	↓ 1.1%
3.Property Income	148	3. Net Property Income	109	↓ 26.4%
		# Property Income	116	
		# Property Expenditure	7	
4.Transfer Income	323	4. Net Transfer Income	142	↓ 56%
		# Transfer Income	293	
		# Transfer Expenditure	151	