



China's urban poor – Comparing twice poverty between residents and migrants in 2013 and 2018[☆]

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ABSTRACT

Using data from the China Household Income Project in 2013 and 2018, this paper studies relative poverty among rural *hukou* holders living in urban China and urban *hukou* holders. People living in households with an income below a fixed percent of the median per-capita income and wealth below the same fixed percent of the median per-capita wealth among urban residents are deemed as relative poor. Although migrants with rural *hukou* living in urban China were more prone to twice poverty than urban residents in 2013, this was not generally the case in 2018.

A multivariate analysis shows several factors to be related to the probability of being twice relative poor. Even considering these factors, a rural *hukou* status increased the probability of being twice relative poor in 2013. In contrast, such an excess risk of being twice relative poor was much lesser outspoken in middle and low-ranking cities in 2018. However, rural to urban migrants living in high-ranking cities had a somewhat higher risk of being relative poor than urban residents with the same characteristics in 2018.

1. Introduction

While China's poverty problem was previously concentrated in its rural areas, this situation has changed for several reasons. A decreasing number of rural people are living in households with consumption or income below the global poverty line used by the World Bank or the official poverty line of the Chinese Government. (Chen & Ravallion, 2021) The prime reason for this development is the rapid increase in income for inhabitants of rural China over the decades. For some years, public policy has contributed to the reduction of rural poverty. This is indicated by the Chinese government's goal to end poverty by, 2021, and the ambitious measures it has taken to achieve this. (For example, see Bikales, 2021).

However, the success story of poverty reduction in China's rural areas has not been replicated in urban areas where, unlike before, the majority of the Chinese population now lives. Several processes have contributed to urban relative poverty becoming a serious problem in contemporary urban China. One of these is the economic reforms of the 1990s, which life-long bonds between urban

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workers and work units were broken, with urban unemployment surfacing and several urban residents losing their livelihoods as a result. (Liu & Wu, 2006) Another process leading to the relevance of urban relative poverty in China was the rapid increase of immigration of people with rural residence permits (*hukou*). These two categories of urban relative poor reside and live mostly separate from one another. (Cho, 2013).

Institutionalized in the 1950s and remaining in effect for a substantial period, China's development policy prioritized urban growth at the expense of the rural population. (Knight & Song, 1999) This meant that urban and rural populations were kept separate by the *hukou* system, which categorised Chinese people as urban or rural from birth. (Chan, 2009) Until the mid-1990s, people classified as urban could enjoy life-long bonds with their work units, which provided them with heavily subsidized housing and social security benefits. In contrast, rural *hukou* holders, predominately active in agriculture, were forced to fend for themselves. The previous majority of rural *hukou* holders also had to fund the economic development taking place in the cities by delivering products at low prices and paying agricultural taxes. Unlike urban *hukou* holders, rural inhabitants also had to fund their own housing, and were not entitled to pensions, other social insurance benefits, or subsidized healthcare.

When economic reforms began in China at the end of the last millennium, it gradually became possible for rural people to move to cities. Due to the large income disparity between rural and urban areas, many took advantage of this opportunity. The rural to urban migrants with rural *hukou* were, and still are, typically young adults. After a period in a city, many returned to their home villages. However, there has also been another stream of people to the cities. The regulation of *hukou* means that people born with rural *hukou* could, and still can, convert their *hukou* status provided they met some specific conditions (such as being educated to a higher level). (Zhang & Treiman, 2013) The *hukou* converters typically did not move back to their birthplace, spending the rest of their lives in urban locations.

Since the beginning of economic reform, the number of rural *hukou* holders living in Chinese cities grew to make up a rather substantial section of the urban population. Despite having a higher income than their peers who were left behind, many, but not all, of them came to live less privileged lives than the average urban resident. It is therefore appropriate to compare the prevalence of relative poverty among the two different categories of people living in rural China: rural *hukou* holders and urban *hukou* holders. The over-reaching goal of this paper is to do this with respect to the incidence of relative poverty. We ask: are rural to urban migrants more or similarly prone to relative poverty as urban residents? What is the composition with respect to rural to urban migrants and urban residents of the relative poor living in China's urban areas?

This study is based on data from the China Household Income Project (CHIP). When defining who is considered relative poor, we apply two criteria. People are classified as "twice relative poor" when they live in a household with both income and wealth lower than a given percent of the median as these variables are observed for urban residents in China in the same year. We vary this percentage of the median to investigate to what extent comparisons between urban residents and rural to urban migrants is sensitive to the height of poverty line. We also estimate multivariate models that show how various factors are related to the probability of being classified as "twice relative poor" when the poverty line is set to a fixed percent of median income and a fixed percentage of median wealth of urban residents. We are also interested in whether such factors can fully account for observed differences in relative poverty rates between rural to urban migrants and urban residents.

In this paper, we investigate the situation in urban China in 2013 and 2018. This allows us to study changes over a period that should be of interest for several reasons. Firstly, and probably most important, is that wages for rural migrants increased faster than among urban residents. This was primary due to the rapidly increasing demand for migrant workers. Supply changes also occurred. For example, the level of education increased more rapidly among migrants than urban residents.¹ Secondly, public policy regarding the importance of *hukou* status changed to some extent between the two years. These changes led to the separation of people due to *hukou* status becoming less important in small and medium-sized cities while a similar development did not take place in the largest cities. It should also be noted that after several years of rapid expansion, the number of rural *hukou* holders living in urban areas stabilized at the highest level in 2013 and had not increased in 2018. Thirdly, although we are not the first to compare the incidence of relative poverty in urban China between urban residents and rural to urban migrants with rural *hukou*, the review in the next section highlights conflicting results in the existing literature. While one group of studies reported higher poverty rates among rural to urban migrants than among urban residents, there are also several studies that have not found such differences. The first contribution that we aim to make with this paper is to this literature of comparing relative poverty between rural to urban migrants and urban residents.

The second contribution is our use of a definition of "poverty" which, to our understanding, has not been previously applied to China. This definition takes into account not only the level of income in a person's household, but also the value of its possession of wealth. Under such considerations, "twice poverty" allows for a broader understanding of poverty than inspecting a household's income alone. The third contribution is to report the extent of poverty and its changes in cities of different sizes. Such a disaggregation

¹ In a meta-analysis of a large number of studies of *hukou*-based wage discrimination in China, Liu and Wu (2021) found evidence that discrimination by *hukou* status has tended to diminish over time. Using data from different years of the China Household Income Project (CHIP) and the 2018 Chinese Enterprise-Employee Survey (CEES), Xing, Qu, and Yang (2021) studied wages of urban residents and rural to urban migrants. These authors reported that wages earned by rural to urban migrants were 21% (CHIP), alternatively 16% (CEES), lower than urban residents in 2018. However, no less than two thirds of these wage advantages could be attributed to rural to urban migrants being more likely to live in cities with high average wages. Using the Dynamic Monitoring Survey of the Migrant Population of China in 2013, Cai and Zhang (2021) reported that wage differentials between rural to urban migrants and urban residents could be explained entirely by differences in personal characteristics. In the cited study, differences in education and current job experience are the two most important contributors for the wage differential between local residents and rural to urban migrants.

should be particularly interesting as, between the two years studied; *hukou* regulations changed and even disappeared in smaller and medium-sized cities but remained in force in the largest cities. Fourth, our study focuses on two separate years, allowing for a study of change over time. It should also be noted that 2018 is more recent than the years studied in previous analyses of differences in the incidence of poverty between rural to urban migrants and urban residents.

The rest of the paper is structured as follows: in the next section, we review studies in which incidences of poverty among rural to urban migrants and urban residents in China have been compared. Section 3 describes the context while Section 4 deals with some conceptual issues that arise when comparing the incidence of poverty between rural to urban migrants and urban residents. In Section 5, we present the data used for the study, and in Section 6 we present the estimated poverty rates. In Section 7, we report results from estimating multivariate models to study how various factors are related to the probability of being twice poor, and we also report and discuss the estimates. In Section 8, we finally summarize the study and its results. As appendix to the paper and in supplementary material available on line we report additional tables and figures.²

2. The literature review

A number of studies have used income or consumption data to compare the incidence of poverty among rural to urban migrants and urban residents in China. Three of these report clear evidence of poverty being more prevalent among rural to urban migrants than among urban residents. The first is by Hussain (2003) who, based on a large one-time National Bureau of Statistics survey in 1999, studied poverty based on household income as observed over a month. This researcher reported a poverty rate of 15.2% among migrants versus 10.3% for local residents.

A second study reporting higher income poverty rates among rural to urban migrants than among urban residents, in this case based on computations for a period of one year, is by Du, Gregory, and Meng (2006). Based on data from the China Household Income Project (CHIP), this study relates to the year 2002. It also reports that without the longer working hours among rural to urban migrants, the discrepancy in poverty rates with urban residents would have been even larger. Using the same data, Khan (2008) reported that as few as 2% of urban residents were income poor according to the higher poverty line applied by the author. This proportion can be compared to the corresponding poverty rate of 14% observed among rural to urban migrants.

We now turn to studies reporting that according to some, but not all indications, poverty is more prevalent among rural to urban migrants than among urban residents. One of these is by Guo and Cheng (2000) who analyzed data collected for 2008 in the four very large cities of Beijing, Tianjin, Shanghai and Guangdong. On the one hand, applying selected poverty lines, this study reports higher poverty rates among rural to urban migrants than among urban residents. On the other hand, when applying other members of the Foster, Greer and Thorbecke family of poverty measures, indices that also consider how widespread poverty is among the poor, the result showed little difference between rural to urban migrants and urban residents.

While assessment of poverty using information on household income/consumption has a long history, approaches in conceptualized "poverty" as a multidimensional problem are more recent. Yang and Mukhopadhaya (2022) applied the latter approach to compare poverty among rural to urban migrants and urban residents in China. Information from Rural Urban Migration in China (RUMiC) and CHIP for 2002, 2007, 2008, and 2009 were used. On the one hand, these authors reported multidimensional poverty as being more prevalent among rural to urban migrants than among urban residents. However, the relatively unfavorable situation of rural to urban migrants was reported to be largely due to a larger proportion lacking health insurance and pension insurance. It can therefore be claimed that the results are more illustrative of the precarious situation of rural to urban migrants than of similar incidences of (income) poverty among rural to urban migrants and urban residents. Yang and Mukhopadhaya (2022) is a similar analysis which is based on CHIP data for 2002, 2007, and 2013. The authors conclude that the indicators contributing most to multidimensional poverty are lack of health insurance and pension insurance, both found more often among rural to urban migrants than among urban residents.

Finally, we arrive at studies that have reported no difference in the incidence of poverty between rural to urban migrants and urban residents. The first of these is by Park and Wang (2010) who analyzed data from five large and five small cities for the years 2004 and 2005. The other is by Meng (2019), who used data (RUMiC) from 15 cities located in 9 provinces for the years 2008 to 2010, and applied a poverty line derived from guidelines used when processing Dibao (social assistance) applications. In a multivariate analysis, including a dummy for being a rural to urban migrant, a statistically significant coefficient that is negative when poverty is assessed based on income, but positive when poverty is assessed based on expenditure, is reported. These differences can most likely be attributed to higher savings rates among rural to urban migrants than among urban residents.

From this review of the literature, several observations can be made. One, also stated in the introduction, is that there is no consensus regarding whether rural to urban migrants in China are more prone to poverty than urban residents. A second observation is that no previous study has considered the wealth situation of a household when assessing whether it and its members are poor. A third observation is that although some studies have addressed child poverty in urban China, we have not found any that focus on children of migrants living in urban areas. A fourth observation is that all studies surveyed above refer to years preceding 2018, the most recent year that we analyze in this paper. Finally, in previous research there is not much of sensitivity analysis when it comes to how robust

² The material in the Appendix consists of a. descriptive statistics for rural to urban migrants' personal characteristics. b. estimates of poverty rates among urban residents and migrants based on poverty lines set at 40% respectively 50% of median income among urban residents as observed the same year. c. Descriptive statistics for variables used for the estimates reported in Table 6 and Table 7. d. Estimates from relating the probability of twice poor, income poor but not wealth poor and wealth poor but not income poor to various explanatory variables.

results are with regard to how high the poverty line is specified.

3. Context

Fig. 1 illustrates how the number of rural to urban migrants with rural *hukou* has evolved during the period from 2008 to 2019. The figure shows a rapid increase until 2008, when the global falling demand for goods produced in China led to a rapidly declining demand for migrant workers. However, the number of migrants grew soon thereafter, although the number of rural to urban migrants leveled out just shortly afterwards. From this follows that in the two years studied in this paper (2013 and 2018), the total number of rural to urban migrants in China were of similar magnitude.

It is widely perceived that earlier rural to urban migration of rural *hukou* holders was predominately temporary. Many adult migrants left their dependent children in their villages, which most likely had consequences for their development. Chen and Ravallion (2021), who surveyed studies of how parents' migration affected the education of their children, report many results indicating that such children were adversely affected by their parent's migration.

For a long time, rural to urban migrants with rural *hukou* were easily able to find urban employment in some sectors. For example, many male migrants found jobs as construction workers and many female migrants found jobs in restaurants or domestic work. By working several hours per week, many, but not all, of these migrants were able to accumulate a considerable amount of savings. These savings were typically brought back to members of migrants' original households and were used for various purposes: investment in housing, in productive assets or to increase private consumption.

For many years, barriers to "good jobs" in the cities were very large, and sometimes even impossible to cross for rural *hukou* holders. A good, stable job with a predictable income, also qualifying for social insurance benefits, access to subsidized housing, and subsidized health-care, have been beyond reach for many rural to urban migrants. For this reason, the labor market in urban China was for long best be described as segmented. Most rural to urban migrants with rural *hukou* could easily find a job in the lower segment, while access to the higher segments were reserved for those with urban *hukou*. The fact that holders of rural *hukou* are, on average, educated to a considerably lower level than urban residents contributed (and to some extent still contributes) to this situation.³

However, it is commonly perceived that the relative situation of rural to urban migrants in relation to those with urban *hukou* has changed between the two years (2013 and 2018) here studied. Reasons therefore can be attributed to changed supply, changed demand as well as to changed policy. Starting with the first, it is true that the expansion of the number of rural to urban migrants has come to a halt. Further the composition of rural to urban migrants with rural *hukou* has changed somewhat.⁴ For example the more recent rural to urban migrants are educated to a higher level than their predecessors due to the expansion of rural education. Consistent with this Li and Wu (2023) conclude, after having studied the period 2002 to 2016, that migrant workers economic situation improved compared to urban resident workers during those years. However, such improvements were unequal across cities and groups. Those authors conclude that different from in the largest cities in most small and middle-sized cities, *hukou* status no longer is a restricting factor for recent migrant workers to enter their choice of employment sector.

The foundation bolt in separating rural people from urban people in China is the *hukou* system. Since its introduction in the Maoist-era, it has been reformed several times. The period studied here is the "National New-type Urbanization Plan (2014 to 2020)" "Guo Jia Xin Xing Cheng Zhen Hua Gui Hua, 2014-2020" by the central government of special interest. This plan aimed to reduce the number of rural *hukou* holders living in urban areas by converting their *hukou*. The Plan also aimed to increase rural migrants' entitlement in terms of education of their children, health care, and training. The central government also issued directives to smaller and medium cities to abolish the *hukou* system entirely, 国务院2014年颁布《关于进一步推进户籍制度改革的意见》, which was based on the "The Opinions on Further Promoting the Reform of Household Registration System", issued by the State Council in 2014.

Research shows that the directives of the central government on *hukou* reform have been followed to varying degrees; for example, see Zhang, Wang, and Lu (2019) and Wang (2021). Li, Chen, and Hu (2016) as well as Chu (2020) make critical appraisals of the National Plan. It should also be mentioned that a substantial number of rural residents have been hesitant to convert their *hukou* status—see Chen and Fan (2016). One reason for this is that keeping a rural *hukou* allows the household to use or rent out land at the original place of residence for agricultural production, an option that functions as a form of social insurance. Furthermore, in a continued process of urbanization, peasants who live close to cities may expect the government to compensate them for giving up their land use rights in the future. When these persons convert their *hukou* status from rural to urban, they run the risk of losing such compensation in the future.

To repeat, it is central that *hukou* reform has affected small and medium-sized cities rather than larger cities. As the largest cities offer the most and best employment opportunities, they are usually the most attractive to rural migrants. It should be understood that in such cities, the *hukou* rural/urban division still means a clear division of life chances between *hukou* holders in the city and those who do not have such a status.⁵

³ Rural born persons who study at a university typically have had their *hukou* transferred from a rural to an urban one.

⁴ For example, using the 1990 and 2000 Censuses and the 2005 Mini Census, Colas and Ge (2019) show that the more recent migrants are on average older, more educated, more likely to be female, and also more likely to be married. In our data presented in Section 5, the average length of education among migrants increased from 2013 to 2018 by approximately one year, as did the average age of migrants.

⁵ For details based on the recent development in Beijing see Hayward (2022).

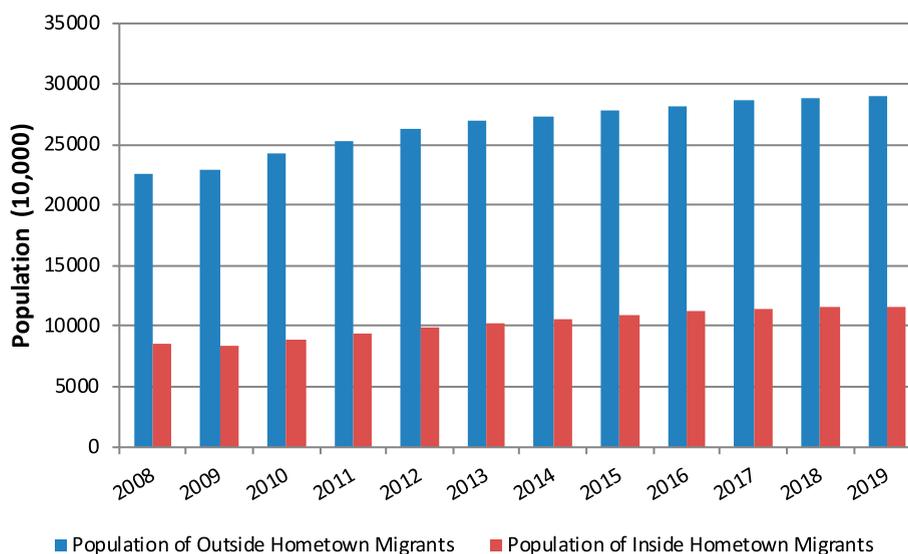


Fig. 1. The number of rural to urban migrants in 2008–2019.

Source: Annual Report on the Survey of Migrant Workers' Monitoring for various years by NBS. The Annual Report on the Survey of Migrant Workers' Monitoring for various years by NBS has been published from 2009 to 2020, and data from 2020 is not shown in the table. Rural to urban migrants are defined as the labor force whose *hukou* are still rural and who undertake non-farm work in or outside of their hometown for 6 months or more. Rural to urban migrants are a labor force. Outside Hometown Migrants are the labor force with rural *hukou* and that have worked outside of their hometown for six months or more. Inside Hometown Migrants are the labor force with rural *hukou* that have been employed for 6 months or more.

4. Concepts

As discussed in Section 2, most previous attempts to compare the incidence of poverty between rural to urban migrants and urban residents in China have been based on information on income or consumption. This means that people living in households with income or consumption below a predetermined level are considered poor. Such a definition is conceptually different from, for example, counting the number and fraction people who live in households receiving Dibao, an income-tested transfer requiring an application from the household in question. Counting the poor based on income or consumption information is also different from assessing the population's subjective evaluation by asking about respondents' happiness, for example.

In this study, we broaden the understanding of "poverty" by not only considering a household's income, but also the wealth possessed by the household. In doing this, we are inspired by Azpitarte (2012) who compared "twice poverty" between people living in the U.S. and those living in Spain, as well as by Kuypers and Marx (2018), who contrasted "twice poverty" among persons living in Belgium and Spain. In this approach, people are considered "twice poor" if their income and also household wealth are below a predetermined cut-off.

When we apply the approach of defining a household as twice poor or not, there are several conceptual issues to consider: should we apply the cut-offs based on the same reference distributions for urban residents as for rural to urban migrants? How should the cut-offs be updated over time? At what level should the cut-offs be set? Starting with the last question, as a start we follow the tradition of defining the cut-off for income, as has often been used when assessing relative income poverty in the European Union. Thus we set the income cut-off at 60% of the median per-capita income and similarly the wealth cut-off at 60% of the median per-capita wealth. In both cases, the cut-offs are based on the distribution for urban residents. However, it is possible to question if the 60% of the median per-capita income and median per-capita wealth is very relevant for urban China.⁶ Therefore in the Appendix we also apply the 40% of median per-capita income and median per-capita wealth cut-offs and the 50% of median per capita income and median per-capita wealth cut-offs. Finally, following the literature surveyed above we apply the same urban poverty lines across all provinces surveyed, although it is possible to take another approach.

This means that we follow the previous studies surveyed in Section 2 by applying the same cut-offs for rural to urban migrants as for urban residents. We recalculate the two cut-offs for each year studied. The median income among urban residents increased rapidly from 2013 to 2018, which means the purchasing power represented by the cut-offs represent also increased rapidly. Such an approach may be motivated by the fact that the amount people regard as necessary in urban China has increased in tandem with the increase in average income as reported by Gustafsson and Ding (2020).

⁶ Since some years is poverty in the Special Administrative Region of Hong Kong officially assessed against a poverty line set to 50% of monthly household income (after having considered the number of household members and income as assessed before policy inventions), see Government of the Hong Kong Special Administrative Region (2021).

One feature of our approach is that we consider the value of wealth owned and kept at the original place of residence by rural-to urban migrants. This makes the definition of poverty here, in our eyes, more relevant for policymaking than what has been applied in previous studies surveyed in [Section 2](#), as in many cases, rural to urban migrants have the option of returning to their village in the event that they face severe economic strain at their destination. From our data introduced in the next section, we can also see that many migrants own assets in their original place of residence. For example, in 2018, as many as 72% of migrant households with rural hukou owned housing at their original rural place of residence and no less than 53% had user rights to land at their original place of residence.

5. Data and descriptive statistics

We use data from the China Household Income Project (CHIP) for the years 2013 and 2018. An attractive property of this data is that rural to urban migrants with rural hukou and urban residents are sampled from the same frame: the urban location in which they lived at the time of the survey. In contrast, some other surveys of rural to urban migrants in China have sampled respondents from establishments where many migrants work. Such a strategy runs a risk of disproportionately capturing rural to urban migrants who have only stayed at the destination for a short period.

The CHIP samples for 2013 and 2018 were obtained from urban locations in the same 14 province level units: Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Shandong, Henan, Hubei, Hunan, Guangdong, Chongqing, Sichuan, Yunnan, and Gansu.⁷ The 2013 sample of rural to urban hukou holders contains considerably fewer observations than the 2018 sample. As sampling probabilities in CHIP vary across province level units, we apply sample weights derived by the CHIP research group. (Yue & Sicular, 2019).

In the samples, we can define people who held a rural hukou at the time of the survey, and also a category of people who were born with a rural hukou and later had it converted to an urban hukou. In this study, a rural to urban migrant with a rural hukou is a person who has lived in a city for at least six months. Only few persons with rural hukou living in urban China are over 59 years of age. When classifying a person as twice poor or not, we not only consider the income of all household members but also the number of household members of all ages. Similarly to all studies surveyed in [Section 2](#), we do not consider the expenditure needs of dependent children, or older relatives, left behind in rural areas by a substantial number of rural to urban migrants. This means that our estimates of poverty among rural to urban migrants tend to be on the lower side.

In [Table 1](#), we describe household income per capita among urban residents and rural to urban migrants with rural hukou computed in constant prices of 2018. Among urban residents, we make a distinction between those who are rural born and those who are urban born. When defining household income, we have not included the value of imputed rents of owner-occupied housing as the value of housing is included in household wealth. Some comments can be made on the content of [Table 1](#). Among urban residents, mean total income is quite similar among those who are urban born and those who are rural born. Furthermore, there are only small differences between these two categories in terms of the roles played by different income components. For both categories, wages are unsurprisingly the largest component, followed by net transfers. The latter stood on average for no less than 17% of average total income. This reflects the fact that urban residents of working age can receive social insurance payments, but also that some urban residents aged under 60 live in households with one or several older members receiving a pension.

In terms of income levels, the picture is different for rural to urban migrants than for urban residents. In [Table 1](#), we can see that between 2013 and 2018, mean household income increased by 24% among urban residents while the increase among rural to urban migrants with rural hukou was as high as 54%, thus more than twice as much. This high rate of increase is largely due to the fact that earnings among urban to rural migrant households had increased by an astonishing 71%, while the corresponding increase among urban residents was 25%. In fact, the mean value of earnings among rural to urban migrant households was on par with the one of urban resident households in 2018.⁸ In our view this rapid increase in average income among rural to urban migrants as recorded in our data has not received the attention in research that it deserves. However, in contrast with the situation among urban residents, [Table 1](#) shows that net transfers were, on average, slightly negative among rural to urban resident households.

CHIP contains information on household wealth, which, for urban residents, was analyzed for the year 1995 by Gustafsson, Li, and Wei (2006) and for the years 2002 and 2013 by Knight and Wan (2022). We are not aware of any previous studies of wealth among rural to urban migrants in China. However, in [Table 2](#) we show such information for 2013 and 2018 where migrants' per capita wealth includes the value of housing, use right to rural land, financial wealth, productive fixed assets, and consumer durables.⁹

Looking at the numbers in [Table 2](#), we see that mean wealth among urban hukou households in 2018 was 72% higher than in 2013. Thus the increase in mean wealth among urban hukou holders was much more rapid than the corresponding increase in mean household income. Particularly rapid was the increase in mean financial wealth as, in 2018, the average was as much as three and a half times as high as in 2013. [Table 2](#) also illustrates that, unsurprisingly, rural to urban migrants owned lesser mean and median wealth than urban residents. However, this gap with urban residents narrowed rapidly for this variable between 2013 and 2018. For example, while the median per-capita wealth among rural to urban migrants was no more than 46% of the median among urban residents in 2003, the corresponding proportion had increased to 78% in 2018.

⁷ The sample for 2013 was derived from 209 cities, the one for 2018 from 328 cities. The CHIP also has a sample of rural to urban migrants referring to 2002. However, as this sample did not cover smaller cities, it is less comparable to the migrant samples used here.

⁸ While the mean annual wages of migrant workers were 31% lower than those of urban resident workers in 2013, the corresponding gap narrowed to 9% in 2018. Wages of urban workers increased by 24% while wages of migrant workers increased by 97%.

⁹ The value of land is imputed based on answers to questions to the households on land size and location of the household. For further details see note to [Table 2](#).

Table 1

Per capita household income components among urban residents and rural to urban migrants. Mean value. Constant 2018 prices.

Component	2013			2018			Change		
	All urban residents	Urban born	Rural born	All urban residents	Urban born	Rural born	All	Urban born	Rural born
Wages	23,101	23,892	20,552	28,722	28,193	30,472	24.34	18.00	48.27
Enterprise income	2471	2528	2288	4493	4752	3636	81.80	87.96	58.87
Property income	1282	1008	2164	1431	1070	2625	11.59	6.15	21.32
Net transfer income	2299	2607	1309	1986	2301	941	-13.63	-11.72	-28.07
Others	0	0	0	0	0	0			
Mean value of total income	29,153	30,036	26,314	36,632	36,317	37,675	25.65	20.91	43.17
Median value of total income	23,731	24,325	21,661	29,258	29,356	28,895	23.29	20.69	33.39
Number of observations	15,087	11,512	3575	17,423	13,222	4201			

Component	2013	2018	Change percent
Wages	15,825	31,229	97.34
Enterprise income	6440	8673	34.68
Property income	671	876	30.60
Net transfer income	-604	-1675	177.37
Others	0	0	
Mean value of total income	22,332	39,102	75.10
Median value of total income	18,255	26,973	47.75
Number of observations	1766	4807	

Source: Authors' calculations from CHIP 2013 and 2018 using sample weights.

Note: The table refers to people below 60 years of age. Sample weights applied.

Note 1: Individuals below 60 years and under are the unit of analysis.

Note 2: We use the same definition of household income as is applied by National Bureau of Statistics. This means that "disposable income" does not include imputed rent of owner-occupied housing.

Source: Authors' calculation from CHIP using sample weights. Income components. Rural to urban migrants. Mean values.

From our data follows that the income cut-off we apply when analyzing twice relative poverty is, when using the 60% of the median alternative set to 14,416 RMB per capita in 2013 and 18,056 RMB per capita in 2018, both in prices of 2018.¹⁰ This means that the purchasing power of the income cut-off increased by 33.7% between the two years. The wealth cut-off was set to 29,600 RMB per capita for 2013 and at 85,140 RMB per capita in 2018, both in prices of 2018. Thus, the increase of the wealth cut-off was as large as 90.1%.

6. Twice poverty rates

In Table 3 we report relative poverty rates based on income, wealth and both variables (twice relative poverty) for urban residents and rural to urban migrants for each of the two years studied. One comment is that applying the income cut-off and also the wealth cut-off unsurprisingly leads to considerably lower proportions counted as relative poor than when applying either one of the two cut-offs. This is illustrated by the numbers for urban born urban residents in 2013. Applying the 60% of median alternative we find that while 21% of the individuals fell under the income cut-off and as many as 30% fell under the wealth cut-off, no more than 12% fell under both cut-offs. A second comment is that the twice poverty rates among urban *hukou* holders who were rural born and those who were urban born are rather similar. This applies to 2013 as well as 2018. These findings are in line with results from previous research showing that people born with rural *hukou* who later moved to a city and had their *hukou* converted to an urban *hukou* became economically well integrated at the destination.

A third comment on Table 3 is that our results clearly indicate higher relative twice poverty rates among rural to urban migrants than among urban residents in 2013. This is in line with some of the previous studies on income poverty surveyed in Section 2 of the paper. The fourth comment on Table 3 is that the twice relative poverty rate among rural to urban migrants fell remarkably rapidly when applying the 60% of median alternative. The decrease among those aged not more than 59 years was from 28% in 2013 to 13% in 2018, making the twice relative poverty rate among those rural to urban migrants equal to that among urban residents. Fig. 2 illustrates that overall picture of how twice relative poverty in urban China changed from 2013 to 2018 is the rapid decrease in twice relative poverty among rural to urban residents. This decrease was in fact large enough to make the relative poverty rate based on the 60% of median income and 60% of median wealth among all persons living in urban China decrease slightly from 15% to 13%.

¹⁰ The 40% of median income poverty line was thus set to 9611 RMB and the 40% median wealth poverty line at 19733 RMB. The 50% of median income poverty line 2013 was set to 12,013 RMB and the 50% of median wealth poverty line at 24667 RMB per capita (all in prices of 2018).

Table 2

Wealth components of urban residents in 2013 and 2018. Mean value. Constant 2018 prices.

Urban residents									
Component	2013			2018			Changes, Percent		
	All urban residents	Urban born	Rural born	All urban residents	Urban born	Rural born	All urban residents	Urban born	Rural born
Housing	189,391	196,817	165,509	251,228	249,526	256,861	32.65	26.78	55.19
Financial assets	28,852	30,271	24,288	129,963	125,249	145,565	350.45	313.76	499.33
Productive fixed assets	7795	6431	12,180	19,597	19,079	21,309	151.40	196.66	74.95
Consumer durables	17,695	18,380	15,491	24,639	246,663	24,549	39.24	34.20	58.47
Other assets	3035	3171	2598	3206	3274	2983	5.63	3.23	14.82
Non-housing debts	1043	963	1301	36,653	3140	5403	251.28	226.03	315.16
Mean value of net wealth	245,724	254,107	218,765	424,967	418,654	445,864	72.94	64.75	103.81
Median value of net wealth	138,233	137,867	139,333	264,644	262,214	272,781	91.45	90.19	95.78
Number of observations	15,087	11,512	3575	17,423	13,222	4201			

Rural to urban migrants			
Component	2013	2018	Changes 2018 / 2013, Percent
Housing (urban and rural housing)	144,637	205,083	41.79
Land value	3094	1526	-50.68
Financial assets	16,891	106,705	531.73
Productive fixed assets	5339	33,426	526.07
Consumer durables	8307	21,161	154.74
Other assets	1508	2708	79.58
Non-housing debts	1393	8719	525.92
Mean value of net wealth	178,383	361,890	102.87
Median value of net wealth	65,709	210,857	220.90
Number of observations	1766	4807	

Note 1: The table refers to people below 60 years of age. Sample weights are applied.

Note 2: Land value is estimated using information from the "Land Transfer Network" in 2021. We used the GDP increased rate to adjust the land price from 2014 to 2020. The land is rented by the government for 30 years, from 1997 to 2027. In the 19th National Congress, Xi Jinping announced that land renting will continue for next 30 years. For this reason, we also consider years of land use rights when estimating household land value.

Source: Authors' estimates from CHIP 2013 and 2018.

Note: Individuals below 60 years of age are the unit of analysis.

Source: Authors' calculation from CHIP using sample weights.

Table 3

Poverty rates among urban residents (urban and rural born) and rural to urban migrants in 2013 and 2018.

	Category	Income poor Percent	Wealth poor Percent	Twice poor Percent	Number of observations
2013	Urban residents	21.28	29.97	12.35	15,087
	Urban born	20.29	30.08	12.04	11,512
	Rural born	24.46	29.64	13.32	3575
	Rural to urban migrants	36.49	62.25	28.43	1766
2018	Urban residents	23.91	30.35	13.53	17,423
	Urban born	24.69	30.25	14.15	13,222
	Rural born	21.29	30.68	11.48	4201
	Rural to urban migrants	21.59	43.05	12.82	4807

Note 1. The table refers to people below 60% of the median income among urban residents the same year as poverty is assessed and refer to persons below 60 years of age.

Note 2: The table refers to people below 60 years of age. Sample weights applied.

What do our results say about twice relative poverty among persons aged more than 59 years living in urban China? Given our assumptions on the relative poverty line set at 60% of the medians, the rate of twice relative poor among rural to urban migrants aged 60 and above decreased from 32.4% in 2013 to 20.3% in 2018.¹¹ Comparatively, using the same assumptions, the percentage of twice relative poverty among urban residents aged 60 and above was 9.4 in 2013 and 8.7 in 2018. Thus, among older rural to urban migrants

¹¹ The former is based on 74 observations, and the latter is based on 266 observations.

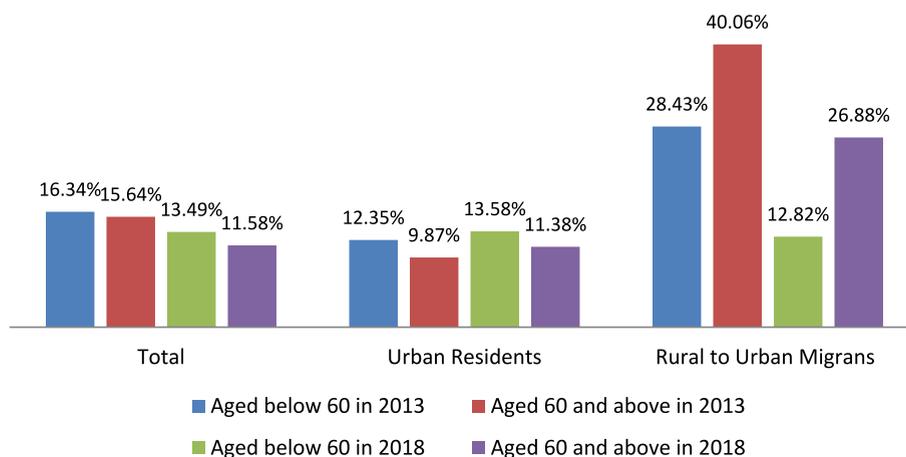


Fig. 2. Twice poverty rates among urban residents, rural to urban migrants in urban China in 2013 and 2018.

Note: The poverty line is set to 60% of the median income per capita among urban residents as observed the same year.

Source: Authors' estimates from CHIP. Sample weights applied.

living in urban China the twice relative poverty rates decreased rapidly from 2013 to 2018. However, we can also conclude that still older rural to urban migrants are in 2018 more poverty prone than their age-peers who are urban residents.

Those results discussed so far are obtained when setting the poverty lines at 60% of median income and 60% of median wealth the same year as poverty is assessed. How sensitive are those results with respect to the 60% level? The answer is that in most cases they are not sensitive, see figures in the Appendix. The major exception is that when the poverty line is set to 40% of the median among urban residents there was no reduction in the poverty rate between 2013 and 2018 among migrants aged 60 and older.¹²

The rapid decrease in twice poverty rates when using the 60% of median poverty lines among rural to urban migrants from 2013 to 2018 resulted in the composition of the urban poor undergoing a rapid change between these two years. Table 4 shows that as many as 43% of those aged up to 60 and counted as twice relative poor were rural to urban migrants in 2013. However, the proportion of rural to urban migrants among the twice relative poor when using the 60% of median poverty line decreased to no more than 5% in 2018.¹³

We now turn to twice relative poverty rates among urban residents and rural to urban migrants in cities of different size. As there are relatively few older migrants in our data for the different categories of cities we focus on poverty among people aged at most 59 years. Table 5 and illustration in Fig. 3 show that rates are generally lowest in cities with the highest rank, and highest in cities with the lowest rank. As expected from the results reported above, there was little of change in relative poverty rates between those two years among people with urban *hukou* and living in cities of different size. In contrast, twice relative poverty rates at the 60% of median level among migrants decreased from 2013 to 2018 in cities of all size, which is consistent with the more rapid increase in average income than among urban residents reported above. In fact, in cities of middle size, we report twice relative poverty rates estimated for the 60% of median level among rural to urban migrants aged at most 50 years that were identical to those of urban residents in 2018. The finding that those twice relative poverty rates in middle-sized cities in 2018 were the same among rural to urban migrants and urban residents, but not in the largest sized cities, is consistent with the reduced importance of the *hukou* in small and medium-size cities, but not in larger cities (See Section 3).

7. Modeling the determinant of twice relative poverty

Why are some people living in urban China more likely to be twice relative poor than others?¹⁴ Do household and individual factors fully explain the higher risk of twice relative poverty among rural to urban migrants observed in 2013? Did the disadvantage of being a rural to urban migrant diminish between 2013 and 2018? In order to address these questions, we have specified and estimated probit models that relate the probability of being classified as twice relative poor (and not twice poor) among people aged at most 60 years to a number of explanatory variables.

Our analysis proceeded in several steps. First, we pooled all persons aged 0–59, urban and rural born, and thereafter related the

¹² However, one should remember that there are only few older migrants in the data we have analyzed for those two years.

¹³ Many migrants face a constrained choice when it comes to bringing their dependent children with them to a city or not. Comparably high costs for urban education and for living in an urban area makes many migrant parents leave their dependent children back in a rural location. See Murphy (2020) for an in-depth study of left behind children in rural Anhui and rural Jiangxi.

¹⁴ In our view is the difference between twice poor or not twice poor much more important than to distinguishing between the for four categories: income poor not wealth poor; wealth poor not income poor; twice poor and non-poor.

Table 4
Composition of China's urban twice poor in 2013 and 2018 (Percent).

	Children		Adults		Child + Adults	
	2013	2018	2013	2018	2013	2018
Urban residents	47.36	92.82	59.95	95.5	56.77	94.82
Rural to urban migrants	52.64	7.18	40.05	4.5	43.23	5.18
Total	100	100	100	100	100	100

Note: The table refers to people below 60% of the median income among urban residents the same year as poverty is assessed and refer to persons below 60 years of age.

Table 5
Twice poverty rates in 2013 and 2018 in cities of different size (Percent).

	2013			2018		
	Urban residents	Rural to urban migrants	Sum	Urban residents	Rural to urban migrants	Sum
Megacities and large cities						
Twice poverty rate (%)	3.79	14.15	6.46	3.19	7.79	3.61
Number of observations	5516	671	6187	6369	2331	8700
Medium-sized cities						
Twice poverty rate (%)	13.58	25.56	15.86	13.51	12.37	13.46
Number of observations	5534	468	6002	5674	1364	7038
Small cities						
Twice poverty rate (%)	22.85	46.56	30.08	24.28	28.95	24.43
Number of observations	4037	627	4664	5380	1112	6492

Source: Authors' computations from CHIP 2013 and 2018.

Note 1. The table refers to people below 60% of the median income among urban residents the same year as poverty is assessed and refer to persons below 60 years of age.

Note 2. Megacities and large cities include municipalities directly under the Central Government, such as Beijing and Chongqing, capital cities of provinces and autonomous regions, and populations of cities with populations above 10 million. Medium-sized cities are those smaller than megacities and large cities, but larger than county-level cities. Smaller cities are county-level cities.

probability of being twice relative poor to a number of household characteristics. In this specification, we also included a dummy-variable indicating whether the head of the household was a rural to urban migrant, and not an urban resident. We estimated this specification separately for people living in large, medium-sized, and small cities.¹⁵ This was done separately for 2013 and 2018. The expectation was that the dummy for being a rural to urban migrant would decrease between the two years as household income increased more rapidly among rural to urban migrants than among urban residents. We also expected that, particularly in small and medium-sized cities, the importance of *hukou* status would diminish in line with what we discussed in Section 3.

In the specification, we included explanatory variables that measured a number of characteristics of the household head: education, age, ethnic minority status, CPC membership, and a dummy of the household head that is rural born but later converted to an urban *hukou*. Several variables measured the demographic composition of the household: the number of children, adults, unemployed adults, and non-full time workers in the household. Spatial variables were also included: the per capita income in the city in which the household resided (values obtained from the data), and 13 dummies for the province level unit in which the household lived.

The estimates in the form of marginal effects of a first specification are reported in Table 6, which contains six columns. A first comment on the estimates is that they show a tendency of the marginal effect to be largest in the smallest cities, and smallest in the largest cities. This is understandable as the poverty rates are highest in cities of the smallest size. Regarding characteristics of the household head, the estimates show the following: length of education and probability of being poor are clearly, and not surprisingly, negatively related. The opposite is true for age of household head and the probability of being poor. CPC membership of the household head and the probability of being poor are significantly negatively related in five of the six equations. Ethnic minority status of household and poverty status are positively related in the estimates for 2013, but not in for 2018.

Turning to the composition of the household, a clear pattern is that the number of children in the household increases the probability of being poor, as does the number of adults in the household in five out of six cases. The number of unemployed adults increases the probability of being poor in all cases, while the relationship between the number of non-full-time workers and the probability of being poor are not equally general. In five out of six cases, we report a clear negative relationship between per capita household income

¹⁵ Megacities and large cities include municipalities directly under the Central Government, such as Beijing and Chongqing, capital cities of provinces and autonomous regions, and cities with populations above 10 million. Medium-sized cities are those smaller than megacities and large cities, but larger than county-level cities. Smaller cities are county-level cities.

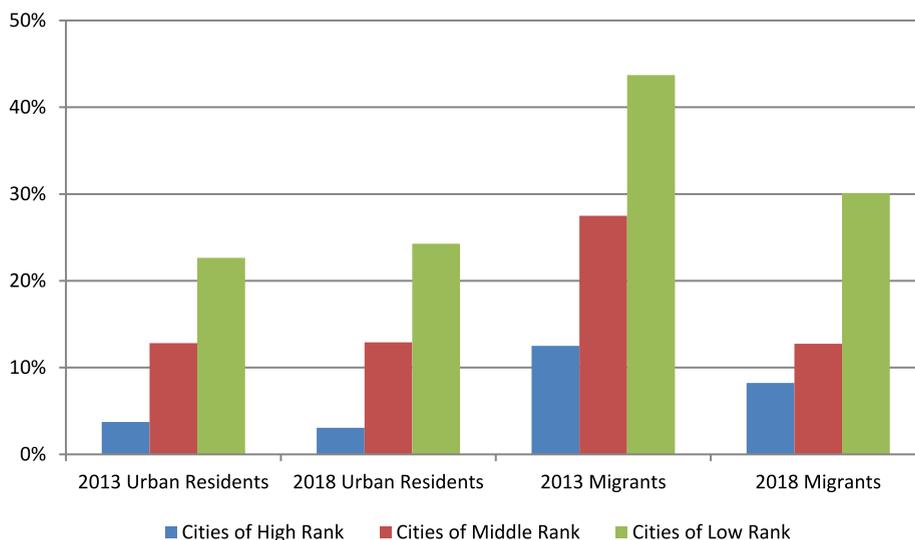


Fig. 3. Twice poverty rates among urban residents and rural to urban migrants below 60 years in urban China by city size in 2013 and 2018. Note: The poverty line is set to 60% of the median income per capita among urban residents as observed the same year. Source: Authors' estimates from CHIP. Sample weights applied.

of the city and the probability of being twice poor. Turning to our main interest, we find that in the coefficient estimates for 2013 the dummies for household head with an urban *hukou* indicate a clear negative relationship with the probability of being poor. The corresponding coefficients are considerably smaller when analyzing data for 2018, which is in line with what we discussed in Section 3. It is only in the sample of people living in largest cities that the coefficient for urban *hukou* is statistically significant.¹⁶ We have also made separate estimates for twice poverty among children and twice poverty among adults. Table 7 reports the estimates of the dummy variable indicating whether the person has a urban *hukou*. These estimates show a similar pattern as those reported in Table 5. An urban *hukou* significantly reduces the probability of being poor in five of six cases when we analyze data for 2013, while in 2018 we find significant coefficient only in the largest cities (and furthermore, the latter are much lower than the estimates for 2013).

In the final step of the multivariate analysis we specify four different outcomes: a. not income nor wealth poor, b. income poor but not wealth poor, c. wealth poor not income poor and d. income poor and also wealth poor and repeat the analysis using the same explanatory variables as above. A main conclusion from this analysis, reported in supplementary material, is that being a migrant household increase the probability of belonging to the category b. (income poor but not wealth poor) in a. megacities and b. large cities and medium cities (but not in small cities) in 2013 as well as in 2018.

8. Summary and conclusions

In this paper, we have contrasted twice relative poverty among two categories of people living in urban China: those with rural *hukou* (residents permit) and those with urban *hukou*. Some of those belonging to the latter category were actually born with a rural *hukou*, but received an urban *hukou* later. A person was defined as poor if living in a household that fulfilled two criteria. One was to receive an income per capita lower than a fixed percent of the median income of urban residents observed the same year. The other was that their household's own net wealth per capita was less than the fixed percent of median for net wealth per capita among urban residents observed the same year. Those criteria were applied to data from the China Household Project collected for 2013 and 2018 to find out who and how many were "twice relative poor" in each of these years. In a sensitivity analysis we varied the fixed percentage from 40% to 50% up to 60% of median income and median wealth.

Between the two years investigated, several changes that can be presumed to have affected the risk of being twice poor occurred. The first, and probably the most important, is that the income, mainly wages, of rural to urban migrants grew far more rapidly than among urban residents. In our view has this rapid increase in average income among rural to urban migrants as recorded in our data has up till now not received the attention in research that it deserves. Another is policy changes that reduced and even abolished the

¹⁶ How to interpret the statistically significant coefficient for megacities is not self-evident. The interpretation is not necessarily that rural to urban migrants are treated unfavorably compared to urban residents in megacities. An alternative interpretation is that a substantial number of urban residents aged 0–60 cohabit with older family members who receive pensions. Support for such an interpretation is provided from an additional analysis. In it we replaced the definition of poverty used in the paper, which is based on each household's disposable income, with one in which we have subtracted the disposable income of each household. Using the resulting variable "disposable income before pensions" as a dependent variable, we estimated the same specification as reported in Table 6. It then turned out that the coefficient for the variable "Urban resident" in the dataset for megacities in 2018 was not statistically significant on a conventional level.

Table 6

Determinants of twice poverty in megacities, medium-sized cities, and small cities in 2013 and 2018. Marginal effects(60% of median).

	2013			2018		
	Megacities and large cities	Medium cities	Small cities	Megacities and large cities	Medium cities	Small cities
Education of household head	-0.0067***	-0.0102***	-0.0160***	-0.0036***	-0.0136***	-0.0190***
Age of household head	0.001***	0.0014***	0.0038***	0.0005***	0.0006***	0.0018***
Household head is a party member (0,1)	0.0100	-0.1217***	-0.0474***	-0.0881***	-0.0663*	-0.0023
Minority household (0,1)	0.0454***	0.0557***	0.0754***	-0.0075	-0.0383**	-0.0052
Number of children in a household	0.0476***	0.0585***	0.1079***	0.0129***	0.0573***	0.0851***
Number of adults in a household	0.0117**	0.0571***	0.0302***	-0.0001	0.0234***	0.0340***
Number of unemployed adults in a household	0.0204**	0.0316**	0.0373*	0.0109**	0.0742***	0.0525***
Number of non-full time workers in a household	-0.0427**	-0.0576***	-0.0224	0.0184***	-0.0038	0.0020
Per capita household income of the city	-0.0009	-0.2245***	-0.0358***	-0.1175***	-0.1794***	-0.3838***
Urban residents (0,1)	-0.8951***	-0.0664***	-0.1991***	-0.0320***	-0.0060	-0.0391**
13 province dummies included						
Number of Observations	5891	6002	4664	8036	7038	6492

Source: Authors estimates based on CHIP 2013 and 2018. Sample weights applied.

Note 1. The table refers to people below 60% of the median income among urban residents the same year as poverty is assessed and refer to persons below 60 years of age.

Note 2: *** indicates statistically significant on the 1% level.

**Indicates statistically significant on the 5% level, but not on the 1% level.

*Indicates statistically significant on the 10% level, but not at the 5% level.

Table 7

Estimates of twice-poverty functions for children and adults separately 2013 and 2018. Selected coefficients.

	Children			Adults		
	Megacities	Middle cities	Small cities	Megacities	Middle cities	Small cities
Urban residents 2013(0,1)	-0.1596***	-0.0153	-0.2294***	-0.0843***	-0.0821***	-0.1906***
Urban residents 2018 (0,1)	-0.0415***	0.0117	-0.0614	-0.0313***	-0.0126	-0.0308
Number of observations 2013	733	995	883	5031	5007	3781
Number of observations 2018	1506	1461	1342	6487	5577	5150

Source: Authors estimates from CHIP 2013 and 2018.

Note 1. The table refers to people below 60% of the median income among urban residents the same year as poverty is assessed and refer to persons below 60 years of age.

Note 2. We have used a specification that includes all other explanatory variables that are listed in Table 6.

importance of *hukou* (resident permit) in small and medium-sized cities.

One key result of this study is that migrants with rural *hukou* living in urban China were on average more prone to twice poverty than urban residents in 2013. This is in accordance with what some, but not all, results from previous studies on income/consumption poverty surveyed in Section 2. In contrast, we have shown that people who were rural born but later had their *hukou* status converted to urban were no more prone to twice poverty than those who received an urban *hukou* at birth.

Another key result is that the difference in twice poverty rates between rural to urban migrants with rural *hukou* and urban residents narrowed rapidly between 2013 and 2018. In fact, using the 60% of median criteria we did not find a higher twice poverty rate among rural to urban migrants aged up to 59 years than among urban residents in 2018. As a consequence, the composition of poor people living in urban China changed rapidly. While almost half of all those twice poor people aged under 60 living in urban China were rural to urban migrants in 2013, a vast majority of the twice poor were urban residents in 2018. However, one should remember that in 2018 were twice relative poverty rates among the relatively few older rural to urban migrants considerably higher than among their much more numerous urban peers having an urban *hukou*.

In this paper, we have shown that a number of factors are related to the probability of being twice poor among people living in urban China in an understandable way. However, even when considering several such factors, a rural *hukou* status increased the probability of being twice poor in 2013. In contrast, such an excess risk of being twice poor among rural to urban residents had disappeared for persons and 59 and younger in low as well as medium-sized cities in 2018. This change is consistent with a more rapid increase in the income of rural to urban migrants than of urban residents. However, rural to urban migrants residing in large sized cities still faced a higher risk of being poor than urban residents with the same characteristics in 2018.

While we claim that the “twice-poverty” definition applied here is substantial step forward in assessing poverty among rural to urban migrants with rural *hukou* and urban residents, our study also has limitations. We have not addressed the issue of poverty or other circumstances among children and older persons left behind by migrant parents in rural China. Our definition does not consider that urban migrants may face different and higher prices than urban residents. One example of this is that many rural to urban migrants

do not have access to subsidized healthcare and some undertake education-related spending for their children that their urban counterparts do not. As often being newcomers, many migrants may also face higher housing prices than urban residents. Furthermore, our definition of twice relative poverty does not consider that rural to urban migrants typically work longer hours during the week and thereby have more limited options than many urban residents when facing economic shock.¹⁷ Thus, our definition of “twice poverty” tends to underestimate the “real” disadvantage of households with rural to urban migrants compared to urban resident households for various reasons.

Data availability

The authors do not have permission to share data.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.chieco.2023.102012>.

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¹⁷ For attempts to consider the numbers of working hours when assessing poverty among urban residents in China, see Qi and Dong (2018) or Wang (2022).

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