Demographic Trends and Sustainability of the Old-Age Security System in China

Enrica Di Stefano*

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Abstract

In the last 60 years, the large population growth in China has been paired by lowering fertility and mortality rates. The country is therefore ageing fast, but this is occurring at a low per capita income levels. This article provides evidence on these facts comparing China to other countries and argues that, if the level of income per capita remains low, China might face increasing problems for the sustainability of the current old-age security system. In particular, the government will have to face a growing pension burden for urban residents; at the same time, it will also need to provide support to an increasing share of the rural population. The traditional system based on family support will in fact be hampered by the decreasing size of the households and by the large rural-to-urban migration.

*Bank of Italy, International Economic Analysis and Relations Department. E-mail: *enrica.distefano@bancaditalia.it*

1 Introduction

According to the United Nations World Population Prospects [UN (2008)], population in China has increased substantially in the last 60 years, from around 550 millions in 1950 to over 1,300 in 2008. Such increase has also been paired by a marked population ageing, mostly due to the combined effect of lowered birth rates and lowered mortality rates. Currently, China is still a relatively young country, with a median age of around 34; but, uniquely among developing countries, it is ageing fast. Over the next few decades the old-age dependency ratio is projected to more than double, with the number of workers projected to reach a peak in 2020 and to decrease steadily afterwards. In this respect, China is experiencing a pattern of ageing similar to Italy and other developed countries. The difference is that in China this is happening while the country remains relatively poor in terms of per capita income [Trinh (2006)]. If the level of income per capita and, more importantly, of income per worker remains low, China could face increasing problems for the sustainability of the current old-age security system. The latter has been traditionally very fragmented with large differences between urban and rural residents and, despite the reform process launched in the 1990s, many differences still exist. In particular, while urban residents have access to public pension plans, rural residents continue to rely on the support of the extended family. The combination of low per capita income levels and ageing population will impact on both. In fact, the government will collect lower contributions to finance the pension burden due to the shrinking size of the work force, not compensated by an increase in wage levels. At the same time, it will also need to support an increasing share of the rural population. The family-based system will in fact be hampered by the decreasing size of the households and by the large rural-to-urban migration. The paper uses the The United Nations 2007 World Population Prospects Data to show that China is experiencing a fast-ageing pattern that will soon make the age structure of its population similar to that of many developed countries. It then combines these data with the observed levels of per capita income and income per worker of 99 countries

over the last 60 years to show that besides the its fast-growing income, the Chinese income level could be still too low in order to sustain its fast ageing population process. A panel data analysis is performed in order to quantify such gap. This evidence is then used to argue that, if the level of income per worker remains low, China could face increasing problems for the sustainability of the current old-age security system. The latter treats differently those who have access to public pension plans and those who do not, especially rural workers and, more recently, an increasing number of non-official migrants, those working for non-SOEs firms, and self-employed. The the combination of low per capita income levels and ageing population are shown to have, potentially, an impact on both groups.

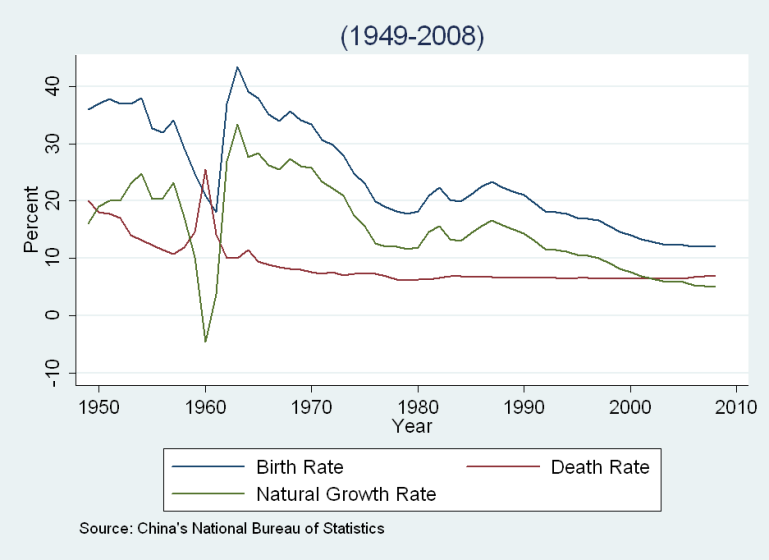
The remainder of the paper is organized as follows. Section 2 presents the most relevant demographic trends observed in China in the last 60 years and discusses the perspective evolution according to the United Nations data. In Section 3, the panel analysis is presented. Section 4 discusses the possible implications of population ageing on the sustainability of the current old-age security system. The last section concludes.

2 Demographic trends and perspectives in China

According to the United Nations World Population Prospects, population in China has increased substantially in the last 60 years, from around 550 millions in 1950 to over 1,300 in 2008. Most of the increase occurred in the 1960s and the early 1970s. In this period the population in China grew more than in any other region of the world, reaching a maximum growth rate of almost 14 percent between 1965 and 1970.

The increase derived from the sharp decline of both birth and mortality rates (Figure 1). In 1949, the official death rate was in fact 20 deaths per 1,000 people, but it had dropped below 8 by 1970, and was only 5 in 2008. The decreasing pattern has been quite regular except during the famines of 1959 and 1960 after the failure of the Great Leap Forward Program (see Box 1). In that biennium, the death rate increased from 12 to 14.6 in 1959, and to 25.4 in 1960. The birth rate also declined over the

Figure 1: Birth and mortality rates



same period, from 36 newborns per 1,000 people to 12, partly as a result of the national birth planning policies started in the 1950s (see Box 2).

Box 1. The Great Leap Forward

The Great Leap Forward was a Five Year Plan launched by Mao Zedong in 1958 and scheduled to run up to 1963. It was based on the idea that agricultural and industrial sectors could be centrally organized to induce the rapid development of both: the industrial sector would take advantage of the massive supply of cheap labor rather than imported machinery. To achieve this, rural China was re-organized into a series of people's communes, a form of relatively self sufficient co-operatives with no private property where wages and money were replaced by work points. By the end of 1958 approximately 25,000 communes, with an average of 5,000 households each, had already been set up. Besides agriculture, communes also incorporated some light industry and construction projects. The establishment of small ("backyard") steel furnaces in every commune and in each urban neighborhood was also encouraged. Substantial effort was expended during the Great Leap Forward on large-scale but the often poor quality of the planned projects eventually led to its failure. Produced machineries revealed to be of low quality. The steel produced by the backyard furnaces was weak and could not be used in construction. Moreover, the steel production method was very inefficient: it took many workers away from harvesting the fields, and furnaces used too much coal taken away from the rail

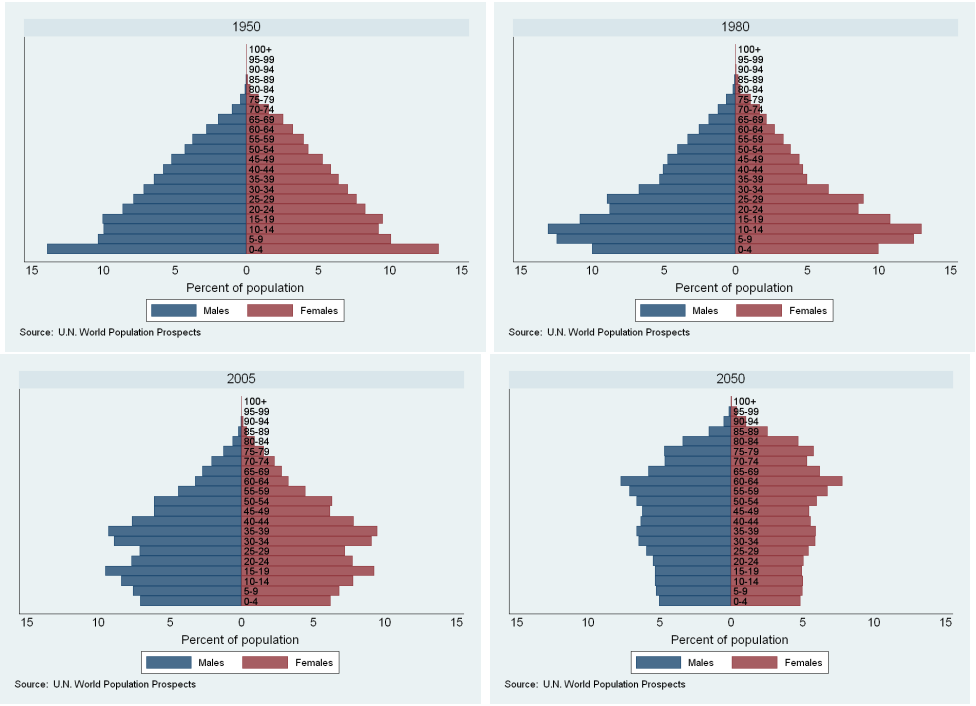
system, which depended on coal driven trains. In terms of economic outcome, the Chinese economy initially grew. Iron production increased 45% in 1958 and a combined 30% over the next two years, but plummeted in 1961, and did not reach the previous 1958 level until 1964. The very bad weather conditions that hit China in 1959 and in 1960 exacerbated these problems resulting in famine and mass starvation. Researchers have estimated that more than 30 million people died between 1958 and 1961 as a result of the Great Leap Forward. By 1959, Mao himself had acknowledged that the Great Leap Forward had been a failure. [For an overview and an assessment of the demographic consequences of the Great Leap Forward see Peng (1987)]

In about 50 years, China has therefore experienced a transition from high birth rates and high mortality rates, to low birth rates and low mortality rates. As a consequence, the age structure has changed dramatically and older groups have been representing increasing shares of the total population. Such patterns are clearly visible looking at the Chinese population by age groups in various years (Figure 2). In 1950, with high birth rates and high mortality rates, the structure of the population had the classic pyramid shape. The effects of the famines during the Great Leap Forward are apparent in the shrinked bars that correspond to the generation born in 1959 and 1960. Namely, the 20-to-24-years-old in 1980 and the 45-to-49-years-old in 2005. The long run effects of the lower fertility and mortality rates appear already in the 1980 pyramid and become apparent in 2005. The mode increased from the 0-to-4-years-old group in 1950, to the 10-to-14-years-old group in 1980, and finally to the 35-to-39-years-old group in 2005. According to the available population forecasts, such trend is expected to continue further. By 2050, individuals between 55 and 64 will represent the largest fraction of the population accounting for over 15 percent of the total.

Box 2. The One-Child policy

China's fertility declined has been supported by strict national birth planning policies. The government had tried to lower fertility since the 1950s and 1960s with educational campaigns. These encouraged later marriage, longer intervals between births and smaller families, in the name of higher maternal and infant well-being. But, despite these efforts fertility remained high, especially in rural areas. In 1979, the government launched "One-Child Campaign". It initially required all couples to have no more than one child. Any additional pregnancy had to be authorized. Compliance was ensured through a system of rewards and punishments. For instance, couples with more than one child might be fined, loose access to education or other privileges. Birth planning policies had changed over the

Figure 2: Population pyramids



years. Since the year 2000, there has been a shift away from the most stringent measure, but Chinese citizens are still obliged to limit the number of children they bear.

Population ageing in China has been paired, in the last decades, by a large rural-to-urban migration. In 1950 only 11 percent of the Chinese population lived in urban areas, by 2005 their share had almost four-folded to 43 percent. The share of urban residents remained below 20 percent until the end of 1970s when urban growth accelerated.

Large-scale migration in China is therefore a relatively recent phenomenon. Previously, a households registration system (the *Hukou* Registration System, Box 2) had strictly controlled the movements of citizens and made it difficult for them to change their permanent residency. Some of these constraints were eased after the economic reform in the 1980s, possibly due to the strong demand for cheap labor, and an increas-

ing number of rural residents started to migrate to urban areas. Since urban areas are mostly concentrated in certain regions, the rural-to-urban migration translated into a regional migration. Migrants tended to move from the poorer regions of the interior to the coastal areas, as it is apparent in Figure 3. Most of the regions in the Northern and Western China had almost no increase in their population; on the contrary, population increased much more in the regions on the coast and around the Special Economic Zones[1].

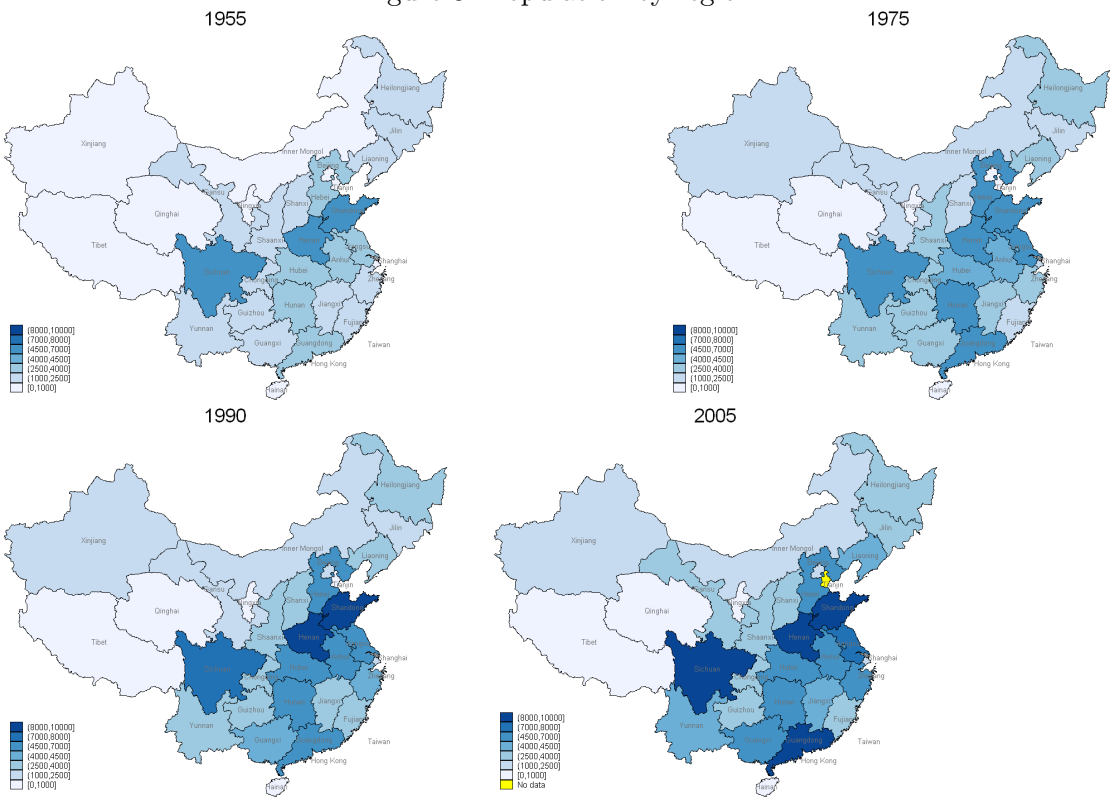
Box 3. The *Hukou* Registration System.

The *hukou* system was first established in 1952, and implemented since 1958. In its original version that lasted until the early 1990s, all Chinese citizens were registered according to two criteria: socio-economic eligibility and residential location. The first criterion is referred to as the *hukou leibie* and distinguishes 'agricultural' and 'non-agricultural' households. The non-agricultural status provided eligibility to a series of state-provided services, such as housing, employment, education, and pension benefits. The second classification criterion refers to the place of household registration (the *hukou suozaidi*) and assigns a place of permanent residency to each citizen. The difference between the *hukou leibie* and the *hukou suozaidi* is that while the former defines *what* services are available to the individual, the latter determines *where* he or she would receive such services. The regulation for changing *hukou* status (*nongzhuanfei*) has been traditionally very strict, controlled by the central government and used as a tool for labor allocation within the centrally planned economy. Since 1978, some of the constraints were eased and control decentralized at local level [Chan and Buckingham (2008)]. The introduction, in 1985, of the Certificate of Temporary Residence is one example; it was valid for one year and could be renewed. Another example is the introduction of the 'blue stamp' household (*lanyin hukou*) in 1992 which was open to a wider population and to more cities. Local government could decide autonomously the application criteria. Despite such openings in the regulation, most migrants are still non-*hukou*, *i.e.* unregistered. These people have no access to schools, health care and other social services. In other words, they are treated as second-class citizens [Liu (2005)].

[1] As part of its economic reforms, beginning in 1980 China established Special Economic Zones in the provinces of Guangdong, Fujian and in the island of Hainan. In 1984 14 other coastal cities opened to overseas investment (listed north to south): Dalian and Qingdao, Qinhuangdao, Tianjin, Yantai, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhanjiang, and Beihai. From 1985, the central government also included (listed north to south): the Liaodong Peninsula, the Hebei Province, the Shandong Peninsula, the Yangtze River Delta, the Xiamen-Zhangzhou-Quanzhou Triangle, the Pearl River Delta, and Guangxi. In 1990 the Pudong New Zone in Shanghai was also opened to overseas investment, as well as more cities in the Yangzi River Valley. Since 1992 the State Council has opened a number of border cities and all the capital cities of inland provinces and autonomous regions. In addition, 15 free-trade zones, 32 state-level economic and technological development zones, and 53 new and high-tech industrial development zones have been established in large and medium-sized cities. As a result, a multilevel diversified pattern of opening and integrating coastal areas with river, border, and inland areas has been formed.

When looking at official statistics of rural-to-urban migration, it is important to bear in mind that there are two categories of migration: the '*hukou* migration' which entails an official transfer of residency and the 'non-*hukou* migration' which provides no formal right of residency in the area of destination. In China, only the *hukou* migration is officially considered. The non-*hukou* migrants are considered temporary migrants, although many have been at their destination for years. They are also outside state welfare obligations. The majority of this floating population are people with agricultural *hukou* moving to cities from rural areas.

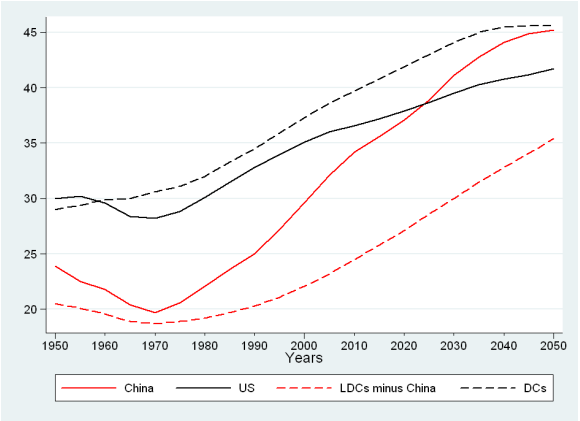
Figure 3: Population by region



3 Population ageing and per capita income: An international comparison

Compared to other countries, China is still relatively young, but it is ageing fast (see Table below). Before the implementation of the strict national birth planning policies, the median age in China was in line with the rest of developing countries (dashed red line, Figure 4). Then, since the 1970s, median age started to increase in all developing world but in China the increase was more rapid. At this pace, its median age will reach the level of the United States (solid black line) in 15 years, and the average level of developed countries by 2050 (dashed black line).

Figure 4: Median age: an international comparison



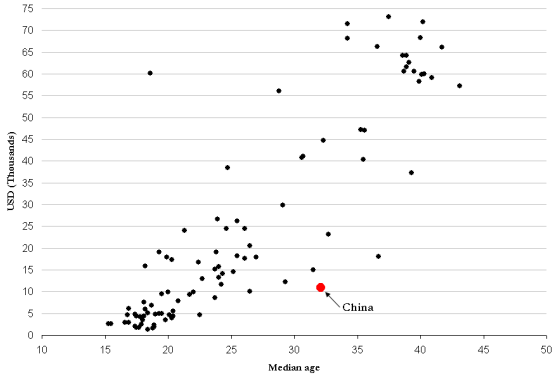
Median ages in 2010:	
China	34.2
United States	36.6
Japan	44.7
Italy	43.3
Germany	44.3
Canada	25.7
Brazil	29
India	25

Source: UN World Population Prospects, 2007.

In other words, China is experiencing a fast-ageing pattern that will soon make the age structure of its population similar to that of many developed countries. The difference is that in China this is happening while the country remains relatively poor in terms of per capita income with respect to countries with similar median ages (Figure 5).

In order to quantify what income level would be consistent with the Chinese median age, I look at the income levels and median ages of 99 countries from 1950 to 2005. Since countries started in 1950 from different stages of development, I perform a fixed-effects panel data analysis to control for this. Results are displayed in Table 3. According to the results, a positive relation is observed between population ageing and income per worker. On average, a one year increase in the median age corresponds to a USD 2,200 increase of income per worker. In general, this fact is consistent with the sustainability of pension systems because when the number of workers decreases, due to population ageing, their per capita income needs increase more than proportionally in order to finance the increasing pension burden. In China this is not happening. If we isolate the Chinese time series from the original dataset, we find that the income per worker in China has grown with a trend of only USD 763 per one year increase of median age.

Figure 5: Median age and income per worker in 2005



N. of groups = 99
N. of obs. = 1104
Avg. obs. per group = 11.5
Corr. of u_i = -0.06

Income per worker	Coeff.	Std.Err.
Median age	2.22***	0.089
Constant	-23.65***	2.88

Source: United Nations, Penn World Tables and author's calculations.

4 Current trends and the sustainability of the old-age security system

If the level of income per capita and, more importantly, of income per worker remains low, China could face increasing problems for the sustainability of the current old-age security system. The latter has been traditionally very fragmented with large differences between those, typically non-agricultural *hukou* holders, who worked in State Owned Enterprises (SOEs) and had access to pension plans, and those who did not, especially agricultural *hukou* holders and, more recently, an increasing number of non-official migrants, urban residents working for non-SOEs firms, and self-employed. The distribution of population across *hukou* types is therefore key for assessing the sustainability of Chinese old-age security system. In fact, despite the reform process launched in the 1990s, individuals with different types of *hukou* are still subject to different rules, and the combination of low per capita income levels and ageing population will impact on both groups.

4.1 The support of the elderly urban residents

The support of elderly people in urban areas, *i.e.* local-*hukou* holders, has been traditionally provided through a public security system first established in 1951 and based on the so called "iron rice bowl" system. The term refers to the guaranteed employment in state owned enterprises with all connected benefits like the provision of a social security net, including pension claims. Pensions were originally based on a very gen-

erous pay-as-you-go scheme which paid defined benefits at 50-70 percent of workers' wages and was solely financed by enterprises current revenues (3 percent of the wage bill). Initially, it also included a national pooling of resources but this practice was eliminated during the Cultural Revolution (1966-76). After that, each firm had to provide for its own retirees. The system became unsustainable in the 1980s due to increased liabilities and lowering firm revenues. On the liability side, more generous retirement conditions were introduces in 1978, such as higher replacement rates (75 percent) and incentives for early retirement. At the same time, the economic reform of the 1980s lowered SOEs revenues by increasing market competition.

In this context, a broad reform process was launched in the 1990s. The new pension system leaves the retirement age limits unchanged but moves from the existing pay-as-you-go scheme to a multi-pillar system for the calculation of the pension benefit. In particular, it relies on the following three pillars:

1. **Basic pension plan.** The first pillar provides pensioners with defined-benefit payments financed entirely by enterprises contributions on a pay-as-you-go basis. The financing mechanism is similar to the pre-reform system, but replacement rates are lower (20 percent), firms' contributions are higher (13 percent of the wage bill), and pooling has been re-introduced.
2. **Mandatory individual plan.** The second pillar is a defined-contribution scheme which imposes the accumulation of additional benefits via individual accounts, jointly financed by individuals (4-8 percent, increasing over time) and firms (7 percent).
3. **Voluntary individual plan.** The third pillar gives each individual to make additional contributions managed by firms or by private insurance companies.

The qualifying period for the basic pension plan is 15 years. No limits are instead imposed under the individual plan. At retirement, this pillar provides an annuity proportional to the account's notional accumulation plus an indexation factor. As an example, 35 years of contributions correspond to a replacement rate of 38.5 percent.

Under the new system, urban employees are divided into three groups with different old-age treatments. The *old* group includes those who had retired in 1997. They will continue to receive the (good) pre-reform benefits. The *new* group consists of those who entered the labor market after 1997. They will be entirely subject to the three pillar scheme described above and will be able to claim pension payments starting in 2012, after 15 years of contributions. Finally, the *mixed* group includes contributing workers in 1997. They will be treated under a mixed regime.

The population trends observed in Section 2 could threaten the sustainability of the new pension system through their impact on the labor force aggregates. In fact, under the new system part of the pension burden will remain unfunded, namely the part deriving from the pay-as-you-go component plus the pension burden inherited from the past to pay the pensions of those retired under the old system. On top of that, it should be pointed out that the new regime, although formally implemented, is actually maintaining a strong pay-as-you-go profile. In fact, contributions paid under both the pooled and the individual accounts are currently deposited into the same accounts and local governments have often used the individual contributions to cover cash shortfalls from current pension payments. If the system remains substantially unfunded, the coverage of the payouts will rest on the payroll taxes levied on the working population. The latter is usually defined as the share of 15-to-64 years-old people as a share of total population. In China, this definition must be adjusted consistently to the fact that most people retire earlier[2]. Table 4.1 shows the forecasted median age and share of the Chinese working population for the next 20 years. The latter is expected to peak in 2010 but will then fall afterwards while median age and old age dependency ratio increase. Relying on the analysis made in Section 3, the income per worker consistent with a median age of 41 would need to increase substantially to compensate for the shrinking size of the work force in order to finance the pension burden. If this does not happen, further changes to the current system may become necessary. For instance,

[2]Men and women at higher managerial position retire at 60 and 55 respectively while those who work in hardship jobs retire at 55 and 45. These exceptions are a small fraction of the total fork force.

an increase of the current (quite low) retirement age limits would enlarge the size of the work force.

Table 1: Working population, median age and dependency ratios

Year	Working population (percent)	Median age	Old-age dependency ratio	Young dependency ratio
1970	50.0	19.7	10.3	39.7
1980	53.6	22.1	10.9	35.5
1990	59.5	25.0	12.1	28.4
2000	60.3	29.6	14.0	25.7
2010	62.1	34.2	18.0	19.9
2020	57.2	37.1	24.1	18.7
2030	53.0	41.1	30.1	16.9

Source: UN World Population Prospects, 2007.

4.2 The support of the elderly with no pension rights

A completely different approach should be taken to assess the sustainability of the current system when considering the support of the elderly among rural residents, people working in non-SOEs firms, self-employed and non-*hukou* migrants. These categories have no access to public pensions and their main sources of income are either employment or family support[3]. The observed population trends could affect the sustainability of this traditional inter-generational support mechanism in several ways. First of all, the birth control policies have reduced the size of the households shifting them from extended to nuclear families and have led to the so called "4-2-1" pattern, which means that one child should expect to take care of two parents and four grandparents. Second, the increasing rural-to-urban (official and unofficial) migration led to an older rural population and poses the basis for a potential perspective poverty issue for unofficial migrants. Migrants are in fact distinguished in *qianyi* migrants who are officially authorized to change *hukou* and have access to social services, and non-*hukou* migrant who are the vast majority. The latter have no access to the public services and

[3]Attempts have been done in the last 20 years to organize rural pension schemes but they have failed to achieve the desired goals, see Wang (2006) for an overview.

often move into the urban areas leaving the rest of the family (children and parents) in the home villages. The lack of registration makes it hard to obtain reliable estimates of their total number (existing estimates range from 56 to over 100 million, see Chan and Li (1999)) but all studies confirm that their number is increasing. This phenomenon brings up two different issues. In the short term, China will have to face the challenge of providing an adequate old age support to the rural population. In the longer term, the sustainability of the migrant population could also become an issue if migrants will not be able to provide for themselves relying exclusively on their own savings. To explore further on the latter, I relied on data from the 2002 Chinese Household

Table 2: Evidence on the migration

Evidence on the migration:	
Median age at migration	26
Job arranged before moving (%)	51.8
Money brought when moving (Yuan) (median)	350
Yearly income at home village (median)	1,000
Type of activity at home:	
- *Farming*	64.6
- *Non-farming*	17.5
- *Student*	12.9
- *Other*	5.0
Current conditions:	
Type of activity:	
- *Self-employed*	52.4
- *Employee*	38.5
- *Other*	9.1
Income (median)	7,200
Percent of jobs providing:	
- *Pension fund*	6.5
- *Medical insurance*	4.0
- *Unemployment insurance*	2.7
- *Housing*	10.8

Source: CHIP (2002).

Income Project survey (CHIP). The project, provides information on individuals and households that have migrated from rural to urban areas and offers the opportunity to explore both the characteristics on individual at the time of migrations and to their

current conditions (see the Appendix for an overview of the sample). At the time of migration (Table 2), the majority was 26 or younger and had their job arranged before leaving the home village. Back in their villages, most were either students or engaged in farming activity. Moving monetary expenses, measured by the money each migrants had when first arrived, were roughly one third of their yearly income at home. In terms of current working conditions, the most common type of activity is self-employment (52.4 percent). In terms of income, migrants earn significantly more compared to their home village. On the other hand, very few employments offer benefits: only 6.5 percent of jobs provide workers with pension funds and only 4 percent insure against unemployment. Moreover, the income earned by migrants is low when compared to that of urban workers. To compare the two groups, I estimate the following reduced form:

$$Y^i = \beta_0 + \beta_1 exp^i + \gamma D^i_{mig} + \Sigma^R_{r=1} \delta_r D^i_r + u^i$$

where for each household i, Y measures total income, exp is working experience of the head of the household proxied by the years of work, D_{mig} is a dummy equal to 1 if migrant and 0 if not. Finally, D_r is a list of R dummies controlling for other relevant characteristics, namely family size, belonging to communist party, region of residence, and educational level of the head of the household. The regression is intended to capture, if any, the effect on total income of being a migrant. Table 3 shows the results and confirm that migrants are indeed penalized, and earn less with respect to urban workers with same characteristics (on-the-job experience, schooling level, province of residence, among others).

Do differences in income levels translate into different saving rates? Are migrants saving enough for their future? Table 4 displays the average saving rates of migrant families disentangled by age of the head of the household. It also contains an adjusted rate, net of the remittances made to the home village to sustain the extended family. The latter is a better measure of what will actually be available to the household in terms of precautionary savings. Unfortunately, the CHIP survey provides information

Table 3: Family income and *hukou* status

N. of obs.	= 6,695
$Prob. > F$	= 0.0000
β_0	20,233**
Migrant	-1,700*
On-the-job experience	140**
Years of schooling:	
5 to 10	2,799**
11 or more	7,686**
Family size:	
2 to 3 people	7,686**
4 or more	9,297**

Source: CHIP, 2002.

Significance is at 1 (**) and 5 percent (*).

on the savings of migrant families only, and a full comparison with urban workers is not possible. Instead, I use the official statistics on saving rates of urban households published in the China Statistical Yearbook. Interestingly, net saving rates are significantly lower, suggesting that migrant households are currently able to save only a small share of their income for the future[4].

Table 4: Saving rates of migrant families

Age of head of the household	Average saving rate	Average saving rate (net of remittances)
20-24	25.0	15.0
25-29	26.4	17.6
30-34	25.8	17.7
35-39	24.8	17.6
40-44	27.4	19.2
45-49	23.9	14.7
Memo:		
Average urban households saving rate	24.3	

Source: CHIP and China Statistical Yearbook.

[4]Median values are even lower ranging from 9 to 13 percent.

5 Concluding remarks

This paper provides evidence on the fact that China is on a fast-ageing pattern while it remains relatively poor. It is then argued that the combination of low per worker income levels and ageing population could have an impact on the sustainability of the old-security system of both the urban and the rural population. In particular, the paper explores the potential perspective pressures arising from the so called floating populations, *i.e.* non-official migrants, using survey data from the Chinese Household Income Project. Results show that the income earned by migrants is low when compared to that of urban workers but, at the same time, their net saving rates are significantly lower. This suggests that migrant households are currently able to save only a small share of their income for the future and could therefore be unable to provide for themselves when elderly. A deep analysis of the policies that could be implemented to face such issues is beyond the scope of this work and is left for future research. Nevertheless, an increase of the retirement age and a reform of the *hukou* system appear to be feasible and desirable measures to be implemented in the short run.

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Appendix

A The United Nations 2007 World Population Prospects

Official population estimates and projections of the United Nations rely on assumptions about the future paths of fertility, mortality and international migration, but since future trends cannot be known with certainty, a number of projection variants are produced. UN data include 8 projection variants: (1) low; (2) medium; (3) high; (4) constant-fertility; (5) instant-replacement-fertility; (6) constant-mortality; (7) constant-fertility and constant-mortality (no-change); and (8) zero-migration. The variants (1)-(5) differ exclusively in the assumed future path of fertility. Variant (6) differs from the medium one only with regard to the path of future mortality. Variant (7) has constant mortality and fertility. The last variant differs from the medium variant only with regard to the path followed by future international migration. Further details on the assumptions regarding fertility, mortality and international migration are available at http://esa.un.org/UNPP/index.asp?panel=4.

B The Chinese Households Income Project

The purpose of the project is to measure and estimate the distribution of personal income and related economic factors in both rural and urban areas of the People's Republic of China. Data are collected through a series of questionnaire-based interviews conducted at the end of 2002. Datasets are drawn from different questionnaires to (i) urban residents and their households,(ii) village leaders, (iii) rural residents and their households, and (iv) migrants and their households. All datasets contain a wide range of demographic and economic variables. Table 5 provides an overview of the sample used in the paper.

Table 5: CHIP sample overview

Obs.	5,318
Male (%)	52.4
Age (median)	30
Age if in the labor force (median)	34
Ethnic minority (%)	9.2
Marital status:	
- *Married*	66.8
- *Never married*	31.9
- *Other*	1.3
Years of schooling (median)	8

Source: CHIP (2002).