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Work after the statutory pension age in urban China and urban Russia

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Abstract

Work after reaching the statutory pension age in urban regions China and Russia is analysed using household data for 2002 and 2013. Despite those countries having the same statutory retirement age, with some exceptions 55 years among women and 60 among men, we report that a remarkable larger fraction of the older urban Russians are working than the older urban Chinese. Such a cross country difference is in direct opposite to what could be predicted from cross country difference in health status among older people. This is a paradox as in each of the two countries the probability to work after reaching the statutory retirement age is as here shown negatively related to being unhealthy. Probable reasons for the cross country differences in the proportion employed after the statutory retirement age are several and include cross country differences in the labour market.

We also show that relative poverty among people over the statutory retirement age in urban Russia is considerably lower compared to people of other ages and also among equally old persons in urban China. The relatively high fraction older people who work in urban Russia has contributed to this. Taken together our results indicate that in case urban China would takes circumstances in Russia as benchmark there is a substantial potential for increasing employment among healthy people under 70. If manifested such increases would not only increase GDP in China but also have a potential for reducing relative poverty among China's older urbanites.

1. Introduction

This paper analyses work after reaching the statutory pension age in urban regions of the two largest countries that have had a planned socialist economy: China and Russia. Both have the same statutory retirement age: With some exceptions 55 year for women and 60 years for men. We ask: How large frequencies males and females work after the statutory retirement age in each of the two countries and what characteristics those workers? How to understand the cross country differences we report? We also ask: Are elderly in urban China and in urban Russia more or less poverty prone than non-elderly? How does the probability of being poor among the urban elderly in each of the two countries relate to work after the statutory retirement age? To investigate those questions we use household data covering large parts of the urban regions of these countries for each of the years 2002 and 2013. By analyzing those data t is possible to find out not only how patterns differ cross countries but also to what extent they have changed.

What motivates studying the extent and profile of work among those who are over the statutory retirement age in urban China and urban Russia and this in a comparative framework? One answer takes the demographic development in each of the countries as point of departure, see Figure 1. Due to low birth rates and better health are the populations in both countries ageing and the size of the labour force has since some time started to shrink. Those processes will in the future put increased financial pressure on welfare arrangements in both countries. Increasing the age when workers fully exit the labour force is one strategy which can appear interesting to policymakers in both countries. This because already at present are in both countries contributions for pension payments relatively high making future increase less attractive. Another motivation for our study is to better understand how work after the statutory retirement age is related to relative poverty in the urban parts of the two countries and thereby add input to debates and policy making on the adequacy and reforming social protection measures.

/Figure 1 about here/

There appear to be very few cross country studies comparing the extent and profile of work after the statutory retirement age; Scheger (2015) and Platts and Glaser (2017) are the exceptions we are aware of.

Therefore there is not much previous understanding of why the rate and profile of work after the statutory retirement age can vary across countries to draw on. To our understanding this study is the first comparing work after the statutory retirement age and poverty among urban elderly in the two countries and how it is related to work after the statutory retirement age.

Turning to results we show that despite having the same statutory retirement age a large difference in the incidence of how many that work after the statutory retirement age in China and Russia exist. Most remarkably, the cross country difference is in direct opposite to what could be predicted from differences in health status of older inhabitants in the two countries. Despite inhabitants in Russia, particularly male, having shorter life expectancy that their Chinese counterparts, and are reported to have higher prevalence of un-health than their Chinese peers, a remarkably higher proportion of them are working after the statutory retirement age. This is a paradox as in each of the countries the probability to work after the statutory retirement age is, as here shown, negatively related to un-healthamong the seniors.

In the paper we report indications of that cross country differences in the labour market are playing an important role for the cross country difference in how many that work after the statutory retirement age. We also discuss that such differences in employment after statutory retirement age can be attributed to cross country differences in alternative ways to support oneself for older people: The pension systems, the role played by families as well as differences in experiences, expectations of the cohorts seniors belong to and that the gender gap in life-expectancy is much larger in Russia than in China. We show that relative poverty among the elderly in urban Russia is considerably lower than for people of other ages while this is much less the case in urban China. Finally we show that in urban Russia work after the statutory retirement age and relative poverty are negatively related, while this is much less the case in urban China.

The paper continues with one section comparing the economic situation for seniors in the two countries and one on factors having potential for understanding cross country differences in the frequency to persons who work after reaching the statutory retirement age. Section 4 reviews the relevant literature and Section 5 presents the data used in this study. In Section 6 we analyse rates of employment among persons over the statutory pension age and circumstances that can shed light on cross country differences in the rate of working after the statutory retirement age. In Section 7 we

turn to relative poverty among seniors and how it is related to work after the statutory retirement age. Finally we summarize the study and discus the results in Section 8.

2. Context

In the 1950s did China import the Soviet economic system to it's cities. Most firms became state owned, some collectively owned and the private sector shrank to become very small. As in the Soviet Union almost all females as well as males in work active ages were employed until reaching the statutory retirement age set with a few exceptions at 55 years for female workers and 60 years for male workers. In return the workers received access to heavily subsidized housing, health and social services, pension rights and a meagre wage. Labour mobility was very low. Modelled on the Russian *propiska* China introduced its *hukou* system which came to effectively separate the urban privileged minority from the disadvantaged rural majority population. While most urban Chinese workers could and can look forward to a pension, the corresponding has not been the case for the farmers, who for many years in number dominate the rural population.

However, this description of the situation in urban China and urban Russia is since several years in most respects obsolete. In the beginning of the 90s the Soviet Union experienced very large political changes. It dissolved as a an entity and the Communist Party lost it's leading role. The 90s was in Russia also a period of economic turmoil, years of very high inflation made bank savings lose their value. There was mass privatization, very rapidly decreases in GDP (see Figure 2) and real earnings fell dramatically (for details see for example the various contributions in Alexeev and Weber(2013). During some years far from all workers and pensioners received their incomes in time. Life-expectancy reduced severely (see Figure 3) and at the end of the millennium unemployment surfaced. In such an environment Russian pensioners had to find ways to cope with their economic problems (see for example Tecernina and Techernin(2002). One was to work to receive earning even after having reached the statutory retirement age. While it is true that most Russian seniors experienced large income losses during the 90s, earning losses by those in work active ages were on average even larger. One should also understand that the state in reform-Russian has not generously support families with children. As consequence poverty rates for elderly have been lower than for families with children, see for example Kanji (2009) or Lopez-Calva et al (2017).

/Figure 2 and Figure 3 about here/

In contrast to the situation in Russia the political system in China has been intact now for several decades. Furthermore, the economy has been growing at a uniquely high speed and duration. From a rather low level has real household incomes been continuously rising. Life expectancy, once lower than in Russia has also continuously increased to become longer than in Russia, see Figure 3. Different from in Russia economic reforms were mostly gradual in China (see for example Naughton, 2007). They started in the rural regions at the end of the 70s and thereafter reached the urban regions. Different from in Russia privatization proceeded slowly. It was not until the end of the 90s that the private sector started to grow, State Owned Enterprises were put under market pressure, the life-long bounds between workers and their employers were abolished. any workers became laid off and some found themselves unemployed.

While the history of the 90s was rather different in urban China and urban Russia regarding the aspects we investigated in this paper, divergence has not been as dramatic thereafter. Increased price of oil and other natural resources stimulated the Russian economy to grow during the first years of the new Millennium (See Figure 2). Parallel to this and as was the case in China life expectancy increased (See Figure 3). Following the slowdown of the global economy in 2008 GDP in Russia decreased by 8 percent in 2009 but the years thereafter it caught up and growth continued until 2012. While the Great Recession hit most countries China continued to experienced high GDP growth-rates, although the rates have tended to be slightly less impressive compared to some previous years.

3. Reasons for cross country differences

How to understand differences in the rate of work after the statutory retirement age in urban Russia is as we will show higher than in urban China? One can distinguish between different kinds of explanations; a first is individual differences. In a given situation is, as we will show below, the probability to work after the statutory retirement age liked to several characteristics of the person:

Healthier as well as younger seniors are more likely to work than unhealthier and older. As measured by life experience the Chinese elderly are different from previously nowadays healthier than their Russian counterparts, see Figure 3. Subjective assessments also show that the Chinese elderly have lower level of depressions than their Russian counterparts.[1] Furthermore, as we will show, the older urban Chinese are as a collective younger than their Russian counterparts. Based on those differences only we would expect that seniors in urban China are working for pay to a larger extent than seniors in urban Russia. However, to some extent acting against such predictions is that Russia's senior are on average longer educated than Chinese seniors, and as we will show there are some indications of seniors with a longer education having a higher probability to work than those with a shorter education.

A second approach to understand why higher proportion of seniors in urban Russia than in urban China work for income after the statutory retirement age is to focus on cross country differences in the labour market. There are some evidence of that worker are stronger enforced to leave working life when she or he reaches the statutory retirement age in urban China than in urban Russia.[2] In addition older urban workers in China should be less attractive among employers than their Russian counterparts as urban China since some years have received a large number of migrant workers from rural regions. Stimulated by large income differences between rural and urban China more and more rural residents, predominately young adults often with relatively short education, have moved to the cities. Once arrived many are willing to work for low or relatively low pay. Such a competition is much less present in the contemporary labour market in urban Russia.

A third approach in understanding why a higher proportion of seniors in urban Russia than in urban China work after the statutory retirement age take differences in alternative ways to support oneself as point of departure. During the planning period did both countries provide pension entitlements to workers, and almost all adults worked for pay. As consequence almost all of the seniors who we observe in 2002 as well as those observed in 2013 were entitled to and received a pension. There were no requirement that the persons have to refrain from working when receiving a pension.

[1]This is reported by Hsieh (2015) who analyszed data from the first wave (2007-10) of the World Health Organization (WHO) study of Global Ageing and Adult Health (SAGE).This study gives support the view that higher levels of economic security and more social cohesion among the Chinese respondents than among the Russian are central for understanding the cross country difference in un-health. In contrast, the same study found no support for that cross country differences in health-rating style was a large factor explaining the cross country differences in health.

[2] For urban China see Li et al (2016) and for Russia Gerber and Radl (2014).

However, the size of the pension differed substantially between pensioners. Relatively large pensions are received by people with a long work career and who have had a well-paid job. Senior with interrupted work histories, for example due to lay-offs, those who had worked some years in private owned firms that did not at all or not fully comply with paying social insurance contributions and those who had worked in less qualified jobs, or not full time received small pensions amounts.[3] According to the standard text book treatment of a worker's choice between leisure and work will high incomes received from pensions as income from capital lead the individual to choose more leisure and thus work less. In many western countries do a considerable proportion of seniors receive capital income and some can maintain themselves by decumulating wealth. However, private property has a much shorter history in the two countries we study and therefore such sources are probably not very important for if seniors work or not.[4]

There is also the differences in the role plaid by family for how elderly in urban China and urban Russia are making their living that can have implications for who many seniors that work for pay. Having grown up children who are financially successful can function as a form of social security: By cohabitation or / and that the older generation receive transfers in form of cash. In return some members of the older generation provide services for the younger generation like child care and housework. We notice that our data shows that co-habitation with other adults (including grown up children) is more prevalent in urban China than in urban Russia (see Table 1 below). So to the extent that family bonds are stronger in urban China than in urban Russia this is a possible explanation for why as we will see a smaller proportion of China's urban elderly are working for pay after the statutory retirement age than in urban Russia.

A fourth approach we discuss for understanding why a higher proportion of seniors in urban Russia than in urban China work for income after the statutory retirement age is cross country differences in experiences of the past and in expectations for the future between the cohorts of elderly we study. All Russian seniors have experiences year of very rapid economic contraction and according to one observer is faith in the Russian pension system low (Remington, 2014, p 14). In contrast most of today's urban China's older urban citizens have experienced very rapid income increases. Working

[3] Wu (2013) and Liu and Li (2016) provides more details on the Chinese pension system, Kovrova. (2007) on the Russian pension system.

[4] According to NBS (2014) did property income make up as little as 1.3 percent of total income in urban China 2002 and 2.7 percent in 2013.

in the same direction, never before have adult children of China's elderly been in a better position to support their needy elderly parents. Something similar is to a much lesser degree the case for children of Russia's older citizens. .

There can also be a fifth and final perspective to approach to understand why a larger proportion of Russia's older citizens work for pay than their Chinese counterparts. Due to the shorter life expectations of males do Russian women have to expect a much longer period of widowhood than their Chinese peers. To work for pay can under such circumstance be a strategy to compensate from the income losses caused by the loss of a husband, a motive which objectively seen is larger in urban Russia than in urban China. To summarize the discussion in this section: While cross country differences in some individual factors (health, age) speaks for a larger fraction urban elderly in China working after statutory retirement age than in Russia other point in the opposite direction (the longer education of Russian seniors, differences in the labour market, the experiences and expectations of the cohort older people, the longer expected period of widowhood in Russia). There are also cross country differences in the pension system on which it is difficult to predict what consequences they have for how many that work after the statutory retirement age.

4. Literature review

We will first discuss studies on urban China related to our research questions starting with those that have investigated what characterize seniors who work.[5] Ling and Chi (2008) used data from the National Survey of the Aged Population in China 2000 and estimate labour force participation equations by gender. In addition to unhealth and high age was the probability to work negatively related to for example savings and the number of durable goods owned, receipt of public pension and positively to minority ethnicity. Gilles et al (2012) (in a study that also covers Indonesia and Korea) used information from the China Health and Retirement Longitudinal Study (CHARLS) 2008 for urban as well as rural elderly by gender. Few significant coefficients are reported for urban China possibly due to the samples not having more than around 200 observations. In contrast one of the most recent study estimating participation equations for urban China, Yu and Schömann (2015) who

[5] Some studies have contrasted urban and rural seniors. Jing and Chou (2010) survey the literature in Chinese and English on participation emphasizing differences between urban and rural regions of China. We have not found any previous Chinese study that has used the same data base as we.

used CHARLS 2011-12, report several significant relationships: High age, female gender, un-health negatively and being self-employed before reaching the statutory retirement age positively are all significant related to work among seniors. In contrast a relationship with education could not be established. Niu (2015) using CHARLS data for 2011 found that the relationship between education and work after the statutory retirement age is not linear. This study also finds that the probability to work after the statutory retirement age is higher for those who worked as self-employed or in the informal sector. Based on the Chinese Longitudinal Health Longevity Survey 1988 to 2005 did Jiao (2010) study consequences of the death of the spouse by estimating Cox proportional hazard model. The results showed that the death of the spouse is a statistically significant positive predictor of the remaining spouse exiting employment and also of death, this because of psychological and health reasons.

What does the literature on urban China say on income sources and on poverty among older people? Liu and Lou (2016) who used CHARLS 2011 report that not more than 10 percent of urban adults over 60 worked for pay, a percentage identical to those who were caring for grandchildren.[6] Two studies of urban China have reported that poverty among seniors is negatively related to pension receipt. One is Saunders and Lujun (2006) who used the National Survey of the Aged Population in China 2000. The other is Park et al (2012) who estimated poverty functions for elderly based on data from CHARLS 2008 for urban as well as rural China. Other studies on urban China have reported that transfers from relatives alleviate poverty among elderly. One example is Lee and Xiao (1998) who studied rural as well as urban areas using data from 1992. Cai et al (2006) using China Urban Labor Survey (CULS), which was conducted in 2001 and 2002 in five large urban cities, also found evidence on that children give money to parents which a rather low income, and hereby to some extent alleviate their poverty. LaFave (2016) use CHARLS data for 2011-12 report that 29 percent of urban elderly to be compared to 47 percent of rural elderly received private transfers during the previous year.

[6]In Li et al (2013) is the assumed link of causality the opposite as in the studies surveyed in the main body of this text. Using cross section data collected in 2006 is health status related to labour force status and some other variables. This study reports that depressive symptoms are negatively related to being employed among males, but not among females.

Finally we can note that there are also studies on urban China investigating possible consequences of older people being employed on the labour market situation of young adults. However, they report conflicting results. According to Fan and Feng (2015) who analyzed province level panel data for 2001 to 2014 does employment of older worker almost fully crowd out employment among young adults. However, the results of Zhang and Zhao (2014) are the direct opposite. On the basis of census data in 1990 and 2000, together with the sample census for 2005, those authors investigate the effect of the elderly employment on youth employment. Using OLS, FE and TSLS estimation methods the authors report that elderly employment and youth employment are positive correlated. Income from elderly employment can increase household consumption, which in turn creates more jobs including higher youth employment.

We now turn to studies of Russia that are related to our research questions. One is Kolev and Pascal (2002) asking similar research questions as we, and uses the same database: Russian Longitudinal Monitoring Survey (RLMS). However, it refers to the situation 1994-99, thus their period under study ends a few years before our period of study starts. The probability of holding a job and the number of hours worked were modelled in separate equations and estimated by gender. The results show that age, education, and health status matters for being employed. The authors also show a low sensitivity of pensioner employment to pension arrears and the amount of pension benefits.

Gerber and Radl (2014) uses a number of surveys of Russia covering the period 1991 to 2007 to analyses labour market participation and earning of Russia seniors. They confirmed the finding by Kolev and Pascal's that economic need had pushed some pensioners to remain in the labor force, while more educated pensioners having more opportunities to work. The authors summarize their findings by stating: "Elderly Russian are not disproportionally blocked from employment following market reform. Following the initial transition shock, the labour market activity increased." In Radl and Gerber (2015) do the authors follow up the previous mentioned study by analyzing data from RLMS. Using the panel property of the data the labor market status of workers before and after passing the statutory retirement age are described. For example seven out of ten full time employed remained full-time employed when reaching the statutory pension age.

Levin (2015) also report results from using the 2002 wave of RLMS, the first of the two years we analyze in this paper. In a first analysis characteristics of persons who are working are contrasted to those who do not, in a second analysis exit into retirement among men over 50 and women over 45 using the 2009 to 2012 waves of RLMS are studied using a random effects probit. Among several results can be mentioned that in addition to health and education of the person being related to market work also negative relationship with household income and positive with partner working were reported. The same study also reported results from focus-group interviews with workers as well as employers. They showed that workers are pessimistic about their possibilities to find a good job post-retirement, believing that the only options would be unskilled routine and physically demanding low paid jobs. Age is generally not considered explicitly as a discriminatory factor by employers. However, employers are hesitant to hire older job seeks as because of expected lower capacity for learning and adjusting to new approaches and teams.

Finally we can also mention Platts and Glaser (2017) who studied return to employment following retirement (that can have started before, at or after the statutory retirement age) in Germany, Russia and United Kingdom estimating hazard rate models. For Russia the authors analyzed RLMS for 1994 to 2012, for Germany the German Socio-Economic Panel and for UK the British Household Panel Survey. The results showed that after a period of retirement 17 percent of German retires had worked at least during one year ("unretired"), while the corresponding proportion in Britain was 26 percent and in Russia as high as 42 percent. Thus compared to the situation in two rich market economies is the proportion of pensioners that are working in Russia rather high. In this study few characteristics of the retired person were found to predict unretirement. The clearest example is that having reported a good health status was positively related to the hazard of working after retirement.

5. Data and characterizing senior workers

The Chinese data comes from the China Household Income Project (CHIP) and is the outcome of collaboration between researchers who designed questionnaires and the National Bureau of Statistics that was responsible for the sampling and fieldwork. The two cross sectional surveys of people with urban residents permit for the measurement year 2002 and 2013 we work with are in many respects similar. The national representative samples were obtained by a multistage procedure in which the province level units Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong,

Chongqing, Sichuan, and Gansu were obtained from larger samples regularly used by NBS to produce official statistics for China. The samples include households and individuals living in cities of various sizes. For further details see for example Gustafsson et al (2014).

For Russia we work with the 2002 and 2013 cross sections of the Russian Longitudinal Monitor Survey (RLMS), a series of nationally representative surveys designed to examine the effects of Russian reforms on the health and economic welfare of households and individuals. The ongoing longitudinal survey began in 1994 with the Phase II survey and is derived by multi-stage probability sampling of households. Interviewers were required to visit each selected dwelling up to three times to secure the interviews. For further details on RLMS see for example Kozyreva et al (2016).

In this paper we use information in CHIP and RLMS on all females aged 55+ and males aged 60 + who were living in an urban area. In both cases are there larger number of observations in 2013 and each year is the Chinese sample somewhat larger than the Russian. Table 1 shows that the smallest sample (Russia 2002) has 1 591 persons, the largest (China 2013) 3 404 persons. The same table also describes the four samples by selected characteristics.

/Table 1 about here/

Females dominate in numbers the samples for both countries, and this to a larger extent in the Russian samples. Behind the gender differences for the elderly are lower age for being over the statutory retirement age for females (55 compared to 60 for males), but also substantial cross gender gap in life expectancy. According to World Bank information was in 2012 the gender gap in life expectancy in Russia as large as 10 years, but not more than 3 years in China. Life expectancy for females was almost the same in China (77 years) as in Russia (76 years) while for males in China life expectancy was 74 years but only 66 years in Russia. It should be understood that statistics on life expectation is a construct based on resent observations on age specific mortality-rates. Therefore it is not necessary an paradox that we report than in the Russian sample people are older than the Chinese samples.

From Table 1 we can also see that among Russian elderly a larger proportion have a longer education than their Chinese counterparts, and according to their own assessments Russian seniors are lesser healthy. The latter is consistent with findings of Hsieh (2015), see above. There are substantial differences in living arrangements between the older people in the two countries. While almost one in four seniors in urban Russia lived completely alone, the corresponding proportion in urban China is very low. Most Chinese elderly live in a household with a non-elderly, while the corresponding is the case for slightly less than half of the Russian elderly.

6. Employment and earnings

We define being employed in the Chinese data if having affirmatively answered the following questions: ”What was your work status during the preceding year?”. According to the survey manual were persons who worked at least one month classified as working. In the Russian data-set we required that the respondent indicated that they were currently employed or answered that they had a job.

/Table 2 about here/

In Table 2 we report for all seniors and for subcategories employment-rates computed for the two years under study for each of the two countries. Almost twice as large proportion of urban seniors in China than their counterpart in Russia were working for pay. In both countries did the proportion seniors working increase from 2002 to 2013: from as low as 5 to 11 percent in urban China, from 17 to as many as 23 percent in urban Russia.[7]

For each country Table 2 shows that it is among people under 70 that the cross country difference in employment rates is rather large, while rather few persons 70 + are employed in any of the urban regions of the two countries. We also see that not surprisingly for both years and the two countries healthy seniors having higher employment rates than their unhealthy peers. Noteworthy is that as many as 44 percent healthy Russian seniors were working in 2013 while in urban China the same

[7]The Russian surveys also include some other questions making it possible to apply a broader definition of working for pay which is not available in the Chinese surveys. If including a positive answer on at least one of them in the definition of working would the estimate of the fraction working among elderly in urban Russia increase by four percent units in 2002 and three percent unit in 2013. The increase in the employment rate among seniors in urban China we report between 2002 and 2013 is consistent with what Liu (2013) report.

year this was the case for only 16 percent, a gap of 28 percent. Russian seniors with a low education have a lower employment rate than other Russian seniors. Such a patter is also fund in the Chinese sample for 2002, but not in the sample for 2013.

When looking at what kind of work seniors have a striking difference between urban China and urban Russia can be seen. Our data shows that the proportion employed in manual work is much higher in urban Russia (40 percent in 2002 and 49 percent in 2013) than in urban China (27 percent in 2002 and only 19 percent in 2013). This kind of difference speaks for the existence of competition from rural to urban migrants in urban China being one factor explaining why a larger proportion of people over the statutory retirement age being employed in urban Russia than in urban China. In our data we can observe how many houers people are employed. In all samples are the differences between seniors and non-seniors small or very small. The largest difference is in the Russian sample for 2013 in which seniors worked on average 7.8 hours per day to compare with 8.8 hours per day among non-seniors.

/Table 3 about here/

In order to better understand what is behind that some seniors work and others not have we estimated logic models. We applied as independent variables introduced in Table 2. We used the same specification for each of the four samples and report the estimates in Table 3. For all four equations we can report three factors that are strongly positively relate to the probability to work after the statutory retirement age: low age, good health and the long education. Among Chinese seniors we report a clear pattern that the probability of employment is negatively related to the size of the pension, which much less of such a pattern is found in the Russian sample. We also report that living in a couple is positively related to the employment probability in both Chinese samples..[8]

[8] In the Chinese samples it was possible to investigate if some additional factors are related to work after the statutory retirement age. In alternative specifications included for example variables measuring household wealth alternatively housing wealth we found no clear pattern.

Our data also shows that seniors who work earn considerably less than non-elderly workers in urban China as well as in urban Russia. The gap amounted in urban China to 47 percent in 2002 and 56 percent in 2013 and in urban Russia to 65 percent in 2002 and 32 percent in 2013. However, to some extent this can be attributed to differences in characteristics between older workers and other workers – for example older workers have on average shorter education than younger workers. Therefore we estimated log earnings functions for sub samples of workers aged 40/45 and older in each of the four samples (see Table 4). The variables of interest are the dummies for being 55/60 to 70 and being 70 +. Two specifications were applied. The first includes as explanatory variables in addition to the age dummies, dummies for gender, education and city size. In the second specification we add dummies for occupation, economic sector (not available for urban Russia 2002), and ownership of firm. [9]

/Table 4a and Table 4b about here/

The results are reported in Table 4a and Table 4b. In all four samples are the negative coefficients for being over the statutory retirement age statistically significant. Comparing the two specifications we find that coefficients for the age dummies are lower when occupation, economic sector and ownership type are included. However, the reduction is not large, particularly in the Russian samples. The negative coefficient for the dummies being 55/60 to 70 years old is much larger in the Chinese samples. This should be another illustration of that the statutory retirement age has a much larger influence on a person's working live in urban China than in urban Russia, most probably as the Chinese elderly faces much higher competition from the young migrant workers. The large negative coefficients for being 70 + in all four samples should be viewed in the context of rather few workers being of such age and also that our data shows that they tend to work less hours than other working seniors.

7. Poverty and work among elderly

/Table 5 about here/

In this section we analyse poverty and work among the elderly in urban China and urban Russia. As background information we first report how different income sources make up household income per capita in the four samples. Table 5 distinguish between pensions, other transfers from public sector,

[9] Gustafsson et al (2015) report earnings functions using the same data as here for 2002 estimated for workers of all ages.

private transfers, earnings by seniors, earnings by other household members and the residual other incomes. Not surprisingly are pensions the single most important income source in households with seniors. The rate of pension receipt is almost 100 percent, the exception being urban China 2002 with a rate of 86 percent.[10] A substantial proportion of households with a senior member also receive other transfers from the public sector, but seen as proportion of average income are such incomes not very important. Similar is the situation of private transfers: A not trivial proportion of households with elderly receive private transfers but as proportion of average income are they small. Much more important are earnings, particularly such received by other household members than seniors.

/ Figure 4 about here/

We define a household and it's members as poor in case it's household per capita income is lower than 60 percent of median household income among people of all ages in urban China respectively in urban Russia as observed the same year in our data. This is a definition that has been used by Eurostat when reporting on poverty among member states of EU and also by OECD when reporting on poverty in it's member states. Such poverty rates are reported in Figure 4. In 2002 was the relative poverty ratefor all inhabitants in urban China somewhat higher than in for all inhabitants in urban Russia. However, this gap had been closed in 2013 due to a fall in the Chinese poverty rate when the relative poverty rate was around 20 percent. . However, the relative poverty rates are much lower among seniors in Russia both compared to non-seniors in Russia and to seniors in urban China. In urban Russia was the difference in poverty rates between seniors and people of other ages largest in 2002 and had become somewhat smaller in 2013.

In the Appendix we report relative poverty rates by characteristics in each of the four samples. In order to better understand how work after the statutory retirement age and other factors are related to poverty status we estimate log models with the probability of being poor as dependent variable. Explanatory variables include a dummy indicting if the senior is working). In the specification we also include variables measuring how large pensions the older people received. This we do by first classifying the older people into four equally sized categories by the size of their pension. Additional variables measure gender, living arrangements, health status, age, education and city size.

/Table 6 about here /

[10] This can at least partly be due to pension arrears during the re-structuring period, on this see Hurst and O'Brien (2002).

The estimates reported in Table 6 show that being employed and the probability of being poor are negatively related in both samples for urban Russia. The same kind of relationship is also found in the 2013 sample for urban China, but not in the sample for 2002. The probability of being poor is, as hardly surprising, also strongly negatively related to the size of the pension in all four samples. Some other results can also be commented on: In the Chinese samples are not having good health positively, and having a long education negatively related to the probability of being poor. In the Russian samples is living with non-elderly positively related with the probability of being poor.

8. Summary and conclusions

In this paper we have studied work after reaching the statutory pension age of 55 for females and 60 for males in urban regions of the two largest countries that have had a planned socialist economy: China and Russia. We have used micro data for 2002 and 2013 and asked: How large frequencies work after the statutory retirement age in each of the two countries? The answer to this question is that the frequencies have increased between the two years investigated and a larger proportion of older people in urban Russia worked as in 2013 not less than 23 percent of the seniors were employed. In contrast the same year not more than 11 percent in urban China were employed. By estimating logit models we investigated what characterise those who work after the statutory retirement age. In each of the samples investigated for both countries we could report clear indications of healthy persons, the younger seniors and those with a long education having higher probabilities to work than others. In the Chinese samples we also found that the probability to work was negatively related to the size of the pension and of being female.

We have also attempted to throw light on why it is more common for seniors in Russia to work than among their urban counterparts. The reasons are probably several and interrelated. However, we have been able to rule out two: Cross country differences in health status and the age distribution of the older people. This as several indications shows that the Chinese seniors are healthier than the Russian seniors, and seniors in China are as a collective younger than the Russian counterparts. We also showed that being over the statutory retirement age has a much larger negative consequence on earnings in urban China than in urban Russia. From the material we have presented we conclude that differences in labour markets are of probably central importance for understanding why considerably more people over the statutory retirement age in urban Russia than in urban China Russia are

working. Other possible reasons why a larger proportion older people in urban Russia than in urban China are working include differences in alternative ways to make a living among older people: pension systems and the role played by families. They also include cross country differences in experiences and expectations of the cohorts the seniors belong to and that female Russians to a larger extent than female Chinese are widows and thus lack incomes from their deceased husband.

In this paper we have also documented the incidence of relative poverty among older and non-older people in urban China and in urban Russia. We found that in 2002 were relative poverty rates for all urban people in China somewhat higher than in urban Russia but this cross country gap had disappeared in 2013. However, a large cross country differences was found for people of different ages. It was shown that in urban Russia were relative poverty rates among older people considerably lower than among non-aged, particularly in 2002. . In contrast relative poverty rates in urban China were not very different from poverty rates among non-aged. We showed that work after the statutory retirement age is negatively related to the risk of being poor in urban Russia both years studied but in urban China only in 2013.

Our results might constitute fuel for policy debate and policy making. The clearest message is most likely that urban China can learn from Russian circumstances. Taking the latter as benchmark there is a substantial potential for increasing employment among healthy people under 70 in urban China. If more people over the statutory retirement age in urban China work this has a potential of not only increase GDP but also reduce relative poverty among the older urbanites.

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Table 1 Older people in urban China and urban Russia 2002 and 2013 by characteristics. Percent

	China 2002	China 2013	Russia 2002	Russia 2013
Gender				
Female	59.24	60.19	72.71	72.92
Male	40.76	39.81	27.29	27.08
Living arrangements				
Living alone	2.60	2.53	23.26	22.69
Couples	28.59	27.44	29.94	30.61
All other living arrangements	68.81	70.04	46.80	46.70
Age				
55/60 – 70	73.23	69.86	58.61	60.09
70 +	26.77	30.14	41.39	39.91
Education				
Low	36.92	35.19	40.16	25.11
Upper middle	39.69	46.03	19.05	19.27
Polytechnic	17.78	7.52	20.10	31.05
Higher	5.61	11.25	20.69	24.57
City size				
Large	6.72	15.54	58.16	57.57
Middle	30.36	19.42	34.03	33.46
Small	62.91	65.04	7.81	8.98
Health status				
Healthy(good and very good)	42.25	44.92	5.28	8.00
Not good, not bad	40.22	42.92	57.36	59.90
Not Healthy (bad and very bad)	17.52	12.16	37.36	32.10
Number of elderly	2,424	3,404	1591	3233

Note: The table refers to women over 55 years of age and men over 60 years of ages. Old Couples living with their elderly parents are defined as "All other living arrangements"
Source: Authors calculation from CHIP and RLMS.

Table 2 Employment-rates for older people in urban China and urban Russia 2002 and 2013. Percent

	China 2002	China 2013	Russia 2002	Russia 2013
Gender				
Female	5.47	9.48	15.57	23.93
Male	5.47	12.82	20.37	21.98
Living arrangements				
Living alone	12.70	6.10	10.62	19.99
Couples	6.82	14.84	16.89	18.57
All other living arrangements	4.63	9.38	19.98	28.21
Age				
55/60 – 70	6.96	14.41	27.41	35.48
70 +	1.39	2.40	1.97	5.21
Education				
Low	1.92	10.59	6.34	10.01
Upper middle	6.13	11.56	16.75	25.85
Polytechnic	8.58	6.30	34.80	25.05
Higher	13.97	11.47	20.30	32.71
City size				
Large	14.72	4.93	19.31	24.31
Middle	5.16	9.19	14.01	23.02
Small	4.62	12.71	11.23	19.00
Health status				
Healthy (good and very good)	7.55	15.65	23.00	43.65
Not good, not bad	5.05	7.34	32.97	28.43
Not Healthy (bad and very bad)	1.42	5.15	5.29	8.97
Employment rate by quantiles of pensions				
First			10.61	29.69
Second			20.55	26.49
Third			25.49	19.88
Fourth			9.17	15.78
Total employment rate among elderly	**5.47**	**10.81**	**16.88**	**23.40**

Note: The table refers to women over 55 years of age and men over 60 years of ages.
Source: Authors calculation from CHIP and RLMS.

Table 3 Estimates of employment probabilities for older people in urban China and urban Russia 2002 and 2013

	China 2002	China 2013	Russia 2002	Russia 2013
Gender				
Male	Omitted	Omitted	Omitted	Omitted
Female	-0.50** (0.227)	-0.89*** (0.135)	-0.520** (0.176)	-0,142 (0.118)
Household structure				
Living alone	1.13** (0.451)	-0.53 (0.504)	-0.326 (0.228)	0.026 (0.129)
Couples	0.56** (0.223)	0.77*** (0.137)	-0.276 (0.179)	-0.459*** (0.118)
All other living arrangements	Omitted	Omitted	Omitted	Omitted
Age				
55/60 – 70	Omitted	Omitted	Omitted	Omitted
70 +	-1.33*** (0.371)	-1.87*** (0.223)	-2.482*** (0.297)	-1.999*** (0.141)
Education				
Low	Omitted	Omitted	Omitted	Omitted
Upper middle	1.55*** (0.310)	0.28* (0.143)	0.495** (0.244)	0.328** (0.162)
Polytechnic	2.16*** (0.348)	-0.01 (0.307)	1.631*** (0.228)	0.538*** (0.151)
Higher	2.85*** (0.417)	0.59** (0.231)	0.761** (0.237)	0.975*** (0.158)
City size				
Large	1.08*** (0.292)	-0.84*** (0.226)	0.548 (0.344)	0,368** (0.187)
Middle	0.25 (0.223)	-0.33** (0.165)	0.329 (0.356)	0,315 (0.193)
Small	Omitted	Omitted	Omitted	Omitted

Health status				
Healthy	Omitted	Omitted	Omitted	Omitted
Relatively healthy (not good and not bad)	-0.33 (0.206)	-0.66*** (0.133)	-0.272(0.277)	-0,489***(0.159)
Not Healthy	-1.56*** (0.443)	-0.96*** (0.247)	-1.421***(0.328)	-1,520***(0.189)
Quartile				
First	Omitted	Omitted	Omitted	Omitted
Second	-1.92*** (0.239)	-0.18 (0.174)	0.153 (0.230)	-0.068 (0.126)
Third	-2.38*** (0.306)	-1.54*** (0.177)	0.789*** (221)	-0.259* (0.137)
Fourth	-3.14*** (0.641)	-1.50*** (0.177)	0.020 (0.278)	-0.284* (0.152)
Constant	-2.58*** (0.354)	-0.40** (0.159)	1.470**(0.603)	1,662***(0.359)
Number of observations	2,406	3,340	1 582	3 174
Pseudo R^2			0.2580	0.1847

Table 4.The relationship between age and earnings obtained from earnings function of workers aged 40 / 45 + urban China and urban Russia 2002 and 2013

Table 4a Parsimonious specification

	China 2002		China 2013		Russia 2002		Russia 2013	
Gender								
Male	Omitted		Omitted		Omitted		Omitted	
Female	-0.29***	(0.029)	-0.40***	(0.040)	-0.344***	(0.051)	-0.272***	(0.030)
Age								
40/45 -55/60	Omitted		Omitted		Omitted		Omitted	
55/60 - 70	-1.44***	(0.054)	-1.60***	(0.057)	-0.151***	(0.051)	-0.326***	(0.031)
70 +	-2.92***	(0.143)	-2.83***	(0.110)	-0.422***	(0.125)	-0.781***	(0.105)
Education								
Low	Omitted		Omitted		Omitted		Omitted	
Upper middle	0.31***	(0.061)	0.06	(0.065)	0.085	(0.095)	0.112**	(0.049)
Polytechnic	0.78***	(0.064)	0.65***	(0.091)	0.518***	(0.093)	0.227***	(0.049)
Higher	1.14***	(0.082)	0.96***	(0.074)	0.248***	(0.093)	0.570***	(0.050)
Constant	8.83***	(0.061)	9.77***	(0.065)	8.785	(0.163)	9.797	(0.066)
R^2	0.267		0.341		0.102		0.178	
Number of observations	4,977		4,310		1,182		2,542	

Note: Estimates based on samples of workers aged 40/45 and older. Dependent variable is log earnings. The specification also includes two dummies for city size (other than small)

Source: Authors estimates from CHIP and RLMS.

Table 4b Extended specification

	China 2002		China 2013		Russia 2002		Russia 2013	
Gender								
Male	omitted		omitted		omitted		omitted	
Female	-0.14***	(0.027)	-0.26***	(0.038)	-0.394***	(0.050)	-0.237***	(0.032)
Age								
40/45 -55/60	Omitted		omitted		Omitted		omitted	
55/60 – 70	-0.99***	(0.052)	-1.03***	(0.057)	-0.111**	(0.052)	-0.284***	(0.030)
70 +	-2.33***	(0.132)	-1.90***	(0.109)	-0.404***	(0.130)	-0.713***	(0.095)
Education								
Low	Omitted		omitted		Omitted		omitted	
Upper middle	0.21***	(0.056)	0.02	(0.060)	0.093	(0.091)	0.099**	(0.047)
Polytechnic	0.44***	(0.060)	0.40***	(0.087)	0.347*** (0.097)		0.183***	(0.047)
Higher	0.68***	(0.073)	0.58***	(0.073)	0.164*	(0.091)	0.455***	(0.052)
Constant	8.25***	(0.059)	8.78***	(0.074)	8.860	(0.176)	9.684	(0.080)
R^2	0.396		0.436		0.1429		0.2557	
Obs	4977		4,310		1182		2542	

Note: Estimates based on samples of workers aged 40/45 and older. Dependent variable is log earnings. The specification also includes two dummies for city size (other than small), three for occupation (other than manual), five for economic sector (other than manufacturing) and three for ownership type (than others).

Source: Authors estimates from CHIP and RLMS.

Table 5 Income components among households with older people in urban China and urban Russia 2002 and 2013: Occurrence and proportion of total income per capita. Percent

(Preliminary version of table)

	China 2002	China 2013	Russia 2002	Russia 2013
Occurrence				
Pensions	86.29	98.51	99,55	98.81
Other transfers from public sector	65.20	56.78	52.46	64.88
Private transfers	13.65	20.83	19.34	17.02
Earnings by elderly	26.80	32.61	21.01	21.81
Earnings by other household members	52.53	44.83	60.44	43.86
Other income	46.97	90.46	n.a.	15.99
Percent of total income per capita				
Pensions	57. 4	47. 5	39.02	58.06
Other transfers from public sector	2. 1	3. 2	4.26	4.40
Private transfers	1. 2	1. 9	12.88	3.01
Earnings by elderly	6. 6	6. 4	11.45	6.87
Earnings by other households members	29. 6	25. 4	24.23	26.51
Other income	3. 2	15. 5	19.61	8.01
Total	100. 0	100. 0	100	100
Obs	4944	6319	1591	3233

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Source: Authors calculation from CHIP and RLMS.

Table 6 Estimated Poverty functions for elderly (persons over 55/60) urban China and urban Russia 2002 and 2013

	China 2002		**China 2013**		**Russia 2002**		**Russia 2013**	
Working								
Not working	Omitted		Omitted		Omitted		Omitted	
Working	0.10	(0.279)	-0.47***	(0.167)	-2.714**	(1.031)	-1.705***	(0.231)
Size of Pensions								
First quartile	Omitted		Omitted		Omitted		Omitted	
Second quartile	-1.36***	(0.145)	-0.81***	(0.153)	-1.008**	(0.369)	-1.195***	(0.169)
Third quartile	-3.31***	(0.338)	-1.51***	(0.132)	-1.653***	(0.435)	-1.841***	(0.211)
Fourth quartile	-3.35***	(0.309)	-3.37***	(0.236)	-2.029***	(0.516)	-2.539***	(0.277)
Gender								
Male	Omitted		Omitted		Omitted		Omitted	
Female	-0.95***	(0.148)	-0.60***	(0.119)	0.117	(0.363)	-0.074	(0.176)
Living arrangement								
Alone	Omitted		Omitted		Omitted		Omitted	
Couples	0.40	(0.369)	-0.08	(0.331)	dropped		-0.573**	(0.267)
Living with non elderly	0.41	(0.365)	-0.01	(0.321)	2.781***	(0.606)	1.367***	(0.205)
Health status								
Healthy	Omitted		Omitted		Omitted		Omitted	
Not good, not bad	0.27*	(0.139)	0.17	(0.118)	-0.031	(0.289)	-0.120	(0.256)
Not Healthy	0.40**	(0.166)	0.36**	(0.160)	-1.919*	(1.070)	-0.063	(0.239)
Age								
55/60 – 70	Omitted		Omitted		Omitted		Omitted	
70 +	0.11	(0.139)	0.08	(0.122)	-0.167	(0.312)	-0.012	(0.164)
Education								
Low	Omitted		Omitted		Omitted		Omitted	
Upper middle	-0.46***	(0.144)	-0.31***	(0.118)	0.205	(0.353)	-0.072	(0.186)
Technical	-0.75***	(0.236)	-0.50*	(0.296)	-0.220	(0.480)	-0.615***	(0.184)
High	-1.64***	(0.552)	-0.99***	(0.345)	-0.776*	(0.459)	-0.588**	(0.219)
City size								
Large	-2.65***	(0.727)	-0.98***	(0.243)	-0.743*	(0.391)	-0.913***	(0.198)
Middle	-0.56***	(0.141)	-0.87***	(0.166)	-0.209	(0.390)	-0.693***	(0.200)
Small	Omitted		Omitted		Omitted		Omitted	
Constant	-0.03	(0.399)	0.28	(0.347)	-2.983**	(1.058)	-0.063	(0.239)
Number of observations	2 274		3 340		1 094		3 174	
Pseudo R^2	0.1847		0.2274					

Note: The relative poverty lines are: 5 791 Yuan per capita for urban China 2002 and 15 762 Yuan per capita Yuan for urban China 2013; 1668 Rubles per capita for urban Russia 2002 and 8578 Rubles per capita for urban Russia 2013.

Source: Authors estimates from CHIP and RLMS.

Figure 1

Composition of the population in China and Russia by age 1960 – 2016. Percent

Figure 1a. The proportion people aged 65 +

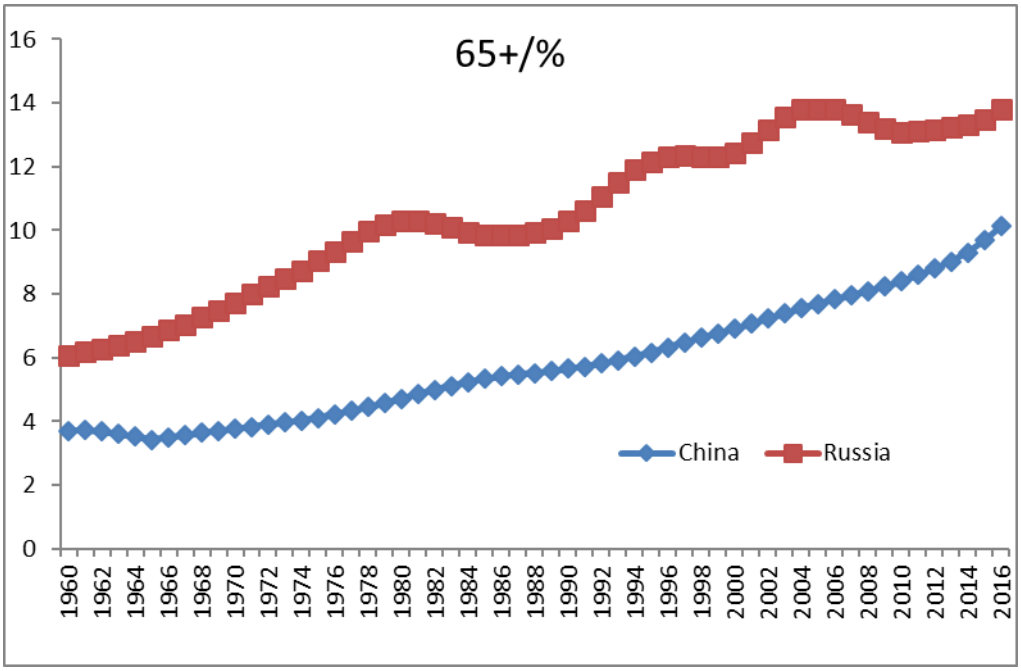
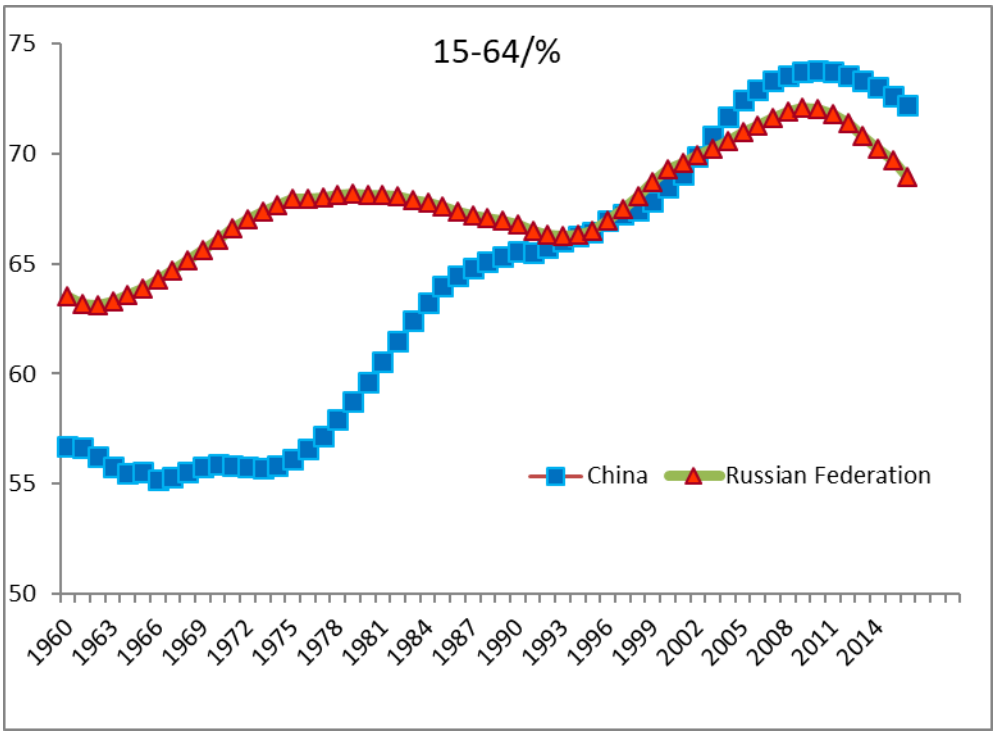


Figure 1 b The proportion aged 15 - 54

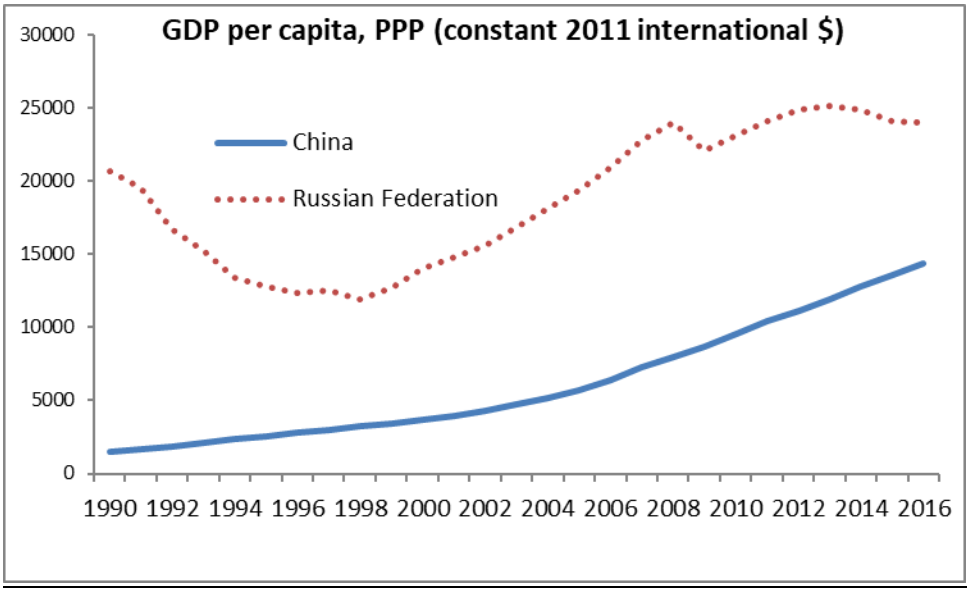


Source: International Labour Organization, ILOSTAT database.

https://data.worldbank.org/indicator/SP.POP.1564.TO.ZS

Figure 2

GDP per capital in China and Russian in constant PPP

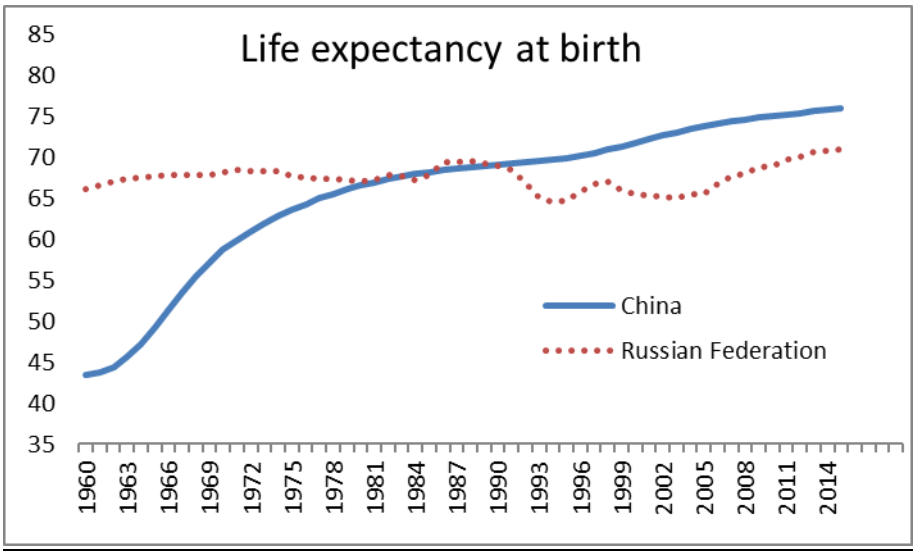


Source: World Bank, International Comparison Program database.

http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD

Figure 3

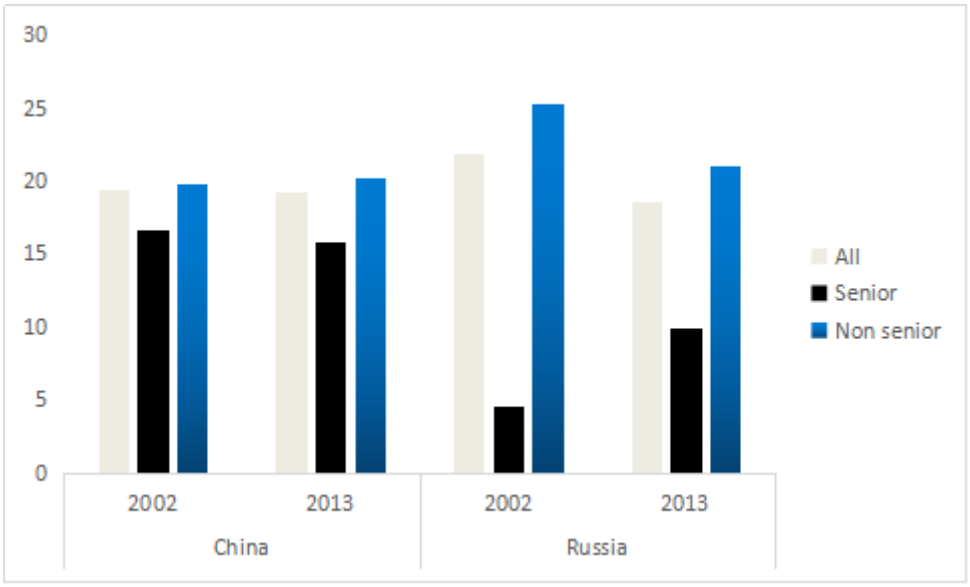
Life expectancy at birth in China and Russia 1975 – 2015



Source: World Bank, International Comparison Program database.

http://data.worldbank.org/indicator/SP.DYN.LE00.IN?

Figure 4 Relative poverty rates among all, older people and not old persons in urban China and urban Russia 2002 and 2013



Source: Authors estimates from CHIP and RLMS.

Appendix

Relative poverty rates among older people in urban China and urban Russia 2002 and 2013 by characteristics. Percent

	China 2002	China 2013	Russia 2002	Russia 2013
Gender				
Female	17.48	15.91	4.89	10.72
Male	15.38	15.72	2.74	7.22
Work status				
Not working	16.61	15.61	5.09	11.62
Working	18.18	18.56	0.38	3.74
Size of pension				
First quartile	35.78	39.25	10.03	22.70
Second quartile	14.21	22.47	3.05	7.94
Third quartile	2.09	12.94	1.71	4.29
Fourth quartile	0.01	1.89	1.36	2.15
Age				
55/60 – 70	14.93	15.52	4.44	11.16
70 +	21.26	16.57	4.10	7.67
Education				
Low	27.82	26.71	5.67	14.34
Upper middle	12.58	12.19	5.62	13.95
Polytechnic	6.73	6.25	3.25	7.02
Higher	2.94	3.13	2.17	5.29
Household structure				
Living alone	19.05	17.44	0.82	4.62
Couples	20.35	15.63	0.00	3.24
All other household types	14.99	15.86	8.81	16.56
City size				
Large	1.23	4.16	2.89	6.94
Middle	11.96	7.87	5.20	10.48
Small	20.52	21.00	10.90	25.22
Health status				
Healthy	13.04	14.52	1.09	9.20
Not good, not bad	17.40	15.40	4.35	9.43
Not Healthy	23.88	22.22	4.70	10.32
Number of observations, elderly	2,424	3,404	1,543	3,174

Note: Poverty is defined as living in a household with per capita income lower than 60 percent of median per capita income the same year.
Source: Authors calculation from CHIP and RLMS.

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