EXPECTED AND UNEXPECTED CONSEQUENCES OF RUSSIAN PENSION INCREASES

Abstract

The paper studies the consequences of a pension increase in Russia in 2010. There is not much research on the effects of pension rises in Russia. In particular, researchers have not yet analyzed the influence of pension increases in Russia on non-elderly people and the heterogeneity of this influence. The Russian government is planning to rise pensions significantly within a period of approximately five years. Thus, the analysis of the aftermath of previous pension rises is timely and important. The increase in pension in 2010 is of particular interest due to its unique magnitude, its relative independence from economic trends in Russia at that time, and its plausible exogeneity for pensioners.

The study provides evidence that this jump in pension caused an approximately 5% increase in the number of people who chose to retire. The effect was stronger in two biggest cities of Russia, namely Moscow and Saint-Petersburg, where before 2010 a substantial number of people continued to work reaching the pension age. One out of four employed pensioners living in these cities left the labor force in 2010. In addition, the paper shows a relatively unexpected externality on younger individuals. The labor force participation decisions of younger people who lived with pension receivers were influenced considerably. The non-seniors who cohabited with pensioners, compared with their peers, were less likely to work and look for a job. This change in pension also affected the family structure. The rate of pension receivers living with their children and grandchildren went up significantly. Finally, these changes in pension increased the overall quality of life. The retired people became less concerned about the necessities and more satisfied with life.

Keywords: Pensions, Retirement, Labor Force Participation

Contents

1 Introduction

The pension system is an important issue in Russia. In 2010 the total retirement benefits in Russia were as large as 10% of Russian GDP.[1] The Russian Federation inherited a pay-as-you-go system from the Union of Soviet Socialist Republics. During his presidency Vladimir Putin has already introduced two significant reforms of the Russian pension system (in 2002 and 2005). Recently, in 2018, president Putin started a new reform. According to many economists, the reform was long overdue. The reform is expected to be significant enough to have a considerable impact on the Russian economy as a whole. To understand the potential consequences of this reform, it is important to analyze the previous changes in the Russian pension system.

A number of articles are devoted to the Russian pension system and its changes. My research concentrates on the study of the consequences of a pension increase in Russia. There is little research on this particular topic.

Some articles analyze the pension system during Russia's transition from a state-planned to a market-based economy and provide ideas for further modifications. De Castello Branco (1998), who performed such an analysis, proposed to improve the existing pay-as-you-go system and only then focus on a more complex structure.

The 2002 Russian pension reform is a relatively well-studied case. Gontmakher (2008) stresses the complexity of the pre-reform situation. In the book *Authoritarian Modernization in Russia* (2016) the 2002 Russian pension reform is called a compromise between quite different policy positions. Despite the fact that the compromise was achieved, the reform did not tackle the problems of the pension system. Afanasiev (2003) highlights the drawbacks of the 2002 pension reform. On the other hand, Kovrova, Di Ricerca, and Economiche (2007) manage to find positive effects of that reform as well as that of the 2005 Russian pension reform.

Overall, even after the 2002 and 2005 Russian pension reforms researchers had a consensus about the presence of significant unsolved problems in the Russian pension system. Economists repeatedly suggested an increase of the pension age in Russia (Sinyavskaya (2005), Hauner (2008), Maleva and Sinyavskaya (2010), Gurvich and Sonina (2012)). It is only nowadays that the pension age is finally increased in the country. The 2018 pension reform gradually increases the current pension age from 55 to 60 for females and from 60 to 65 for males. The supporters of the reform underline that the pension age increase will allow to significantly rise the pension size.[2]

[1] See `https://www.vesti.ru/doc.html?id=316634`

[2] See `https://tass.ru/ekonomika/5290888`

In contrast to the researchers, the Russian society did not expect the pension age to increase.[3] The public initial reaction to the reform was unambiguously negative.[4] President Putin made an attempt to change public opinion and spoke to the nation about this issue personally.[5] This did not help change the situation. Local elections were held in September 2018. In spite of the support of the president, many pro-government candidates failed to win the elections. Some political observers claim that it is the pension reform which caused these failures.[6]

Overall, the existing research on the topic had the following goals: the analysis of the 2002 and 2005 pension reforms, the identification of the effective pension age (Sinyavskaya (2005)), the examination of the Russian pension system problems (Gurvich and Sonina (2012)) and the reasons for them (Solovyev (2013)), the discussion of pros and cons of possible pension age increase (Maleva and Sinyavskaya (2010)), the study of the determinants of senior people participation in the labor force (Danielyan (2016), Lyashok (2017)). What is completely missing in the research in this area so far is the analysis of the economic and social effects of a pension increase on other groups of population and the study of the heterogeneity of these effects. My research aims to fill this gap.

The rise in pension in 2010 was of a unique magnitude. The outstanding scale of that rise was initially underlined in the research by Lyashok (2017). In addition to the magnitude, Lyashok highlighted the exogeneity of the increase (from the view point of pensioners) and the independence of that rise from economic trends as a rationale to study this particular rise. I furthermore underline the independence of that pension increase from economic trends in Russia at that time. The average real incomes of non-retired and retired people followed common trends throughout all recent years except for the jump in the 1^{st} quarter of 2010 (see Figure 1). The 2010 pension increase allows separating the effect of pension rises from the influence of all such variables correlated with these changes. The unique magnitude of the 2010 pension increase allows getting rid of possible bias due to the omitted variables. One of such examples is individual's health. Having stronger health a person is more likely to stay in the labor force and have higher wage and pension ceteris paribus. Concentration on the 2010 sharp pension increase makes it possible to see the effects of pension increase per se. Consequences of a sharp increase in pension can provide an idea about the possible aftermath of other changes in the Russian pension system, including the current reform.

[3]See `https://carnegie.ru/commentary/77015`
[4]See `https://fom.ru/posts/14043`
[5]See `https://www.youtube.com/watch?v=1UYMdAABvnw`
[6]See `https://www.pravda.ru/news/politics/elections/09-09-2018/1392918-edinorossy-0/`

My work relates to the literature addressing the relationship between retirement and pensions (see e.g. Lyashok (2017), Manoli and Weber (2016)). I expected to see that a sharp increase in retirement benefits led to the retirement of a higher percentage of senior people. Indeed, my research proved it to be true. Furthermore, the research by Schroder-Butterfill (2004) demonstrates that inter-generational family support provided by older people can influence the degree of economic independence of their children. With higher pensions, elderly people are capable of providing more significant support to their relatives. Therefore, I anticipated to find an externality caused by the 2010 pension increase on the employment among younger adults living with their retired parents. I found this is true. Besides, I expected to see evidence to support the result of Gruber, et. al. (2009) about the absence of substitution between older and younger workers. Again, the findings met expectations.

In addition, I found an effect on coresidence. The existing evidence is ambiguous on this issue. Bianchi (1987) and Young (1987) show that large family economic resources raised the probability of coresidence. However, Goldscheider and DaVanzo (1989) suggest that parents' high income increased the likelihood of children leaving parents' home. My research indicates that in the Russian case the effect of senior people's acute increase in income on coresidence is positive.

I also looked at income influence on life satisfaction. A lot of existing research is devoted to this topic (Clark, Frijters, and Shields (2007)). The importance of relative income is especially emphasized (see e.g. Brickman, Coates, Janoff-Bulman (1978)). My work exploits the 2010 pension increase for the purpose of analyzing the influence of a surge in gains on subjective well-being. Some evidence of positive influence has been found.

These findings are relevant to the current 2018 pension reform in Russia. In order to make predictions about the consequences of this reform, one has to analyze the aftermath of previous significant changes in the Russian pension system. The results of my research provide an idea about possible consequences of current reform and elucidate some characteristics of the Russian society in general. While enriching the literature on the Russian pension system, my research also contributes to the research on labor, family, and subjective well-being economics.

The rest of this paper is organized as follows. Section 2 provides background information. Section 3 describes the data. Section 4 discusses the empirical strategy. Section 5 presents the main results. Section 6 makes robustness checks, provides some historical evidence, and explores heterogeneity. Section 7 discusses the findings. Section 8 concludes.

2 Background

Talking about the federal spendings on retirement benefits in 2010 Vladimir Putin pointed out that these spendings were the highest in the Russian history.[7] Despite the fact that the 2010 pension increase was of a unique magnitude, the authorities announced it a few months before[8] — senior people did not expect such sharp rise in pensions. This increase in pension was made based on the law on labor pension and did not influence such special groups of people who retired earlier as military officials. The 2010 pension increase was calculated based on the employment history and the cost of living in the region.[9] Some economists were concerned whether the government would be able to maintain such a high level of pensions as it was in 2010.[10]

It is important to note that the state pension is a major part of income for most Russian retired individuals. Despite the 2010 rise and regular increases in pension[11] these particular social benefit are considered to be quite small.[12] However, a number of senior people who stop working after reaching the pension age is considerable.[13]

The significance of pensions and the opinions of the retired people is considerable in Russian politics.[14] Opportunistic cycles in pensions can be an expected finding. On the other hand, general public and media tend to become more interested in the retired individuals during anniversaries of the Victory in World War II. Before any anniversary media usually compares the well-being of retirees in Russia and Germany.[15] The celebrations of the Victory in World War II, so called "Victory Days", become more and more significant in Russia[16], therefore, the influence of World War II Victory anniversaries on pension size can be anticipated. Durante and Zhuravskaya (2016) demonstrate that politicians can exploit special events for concealing their misdeeds. "Victory Days" also illustrate the fact that politicians also exploit such special occasions to show off.

[7] See https://www.vesti.ru/doc.html?id=316634
[8] See https://ria.ru/20091130/196272604.html
[9] See http://xn--b1agvbq6g.xn--p1ai/news/economy/valorisation/
[10] e.g. see https://echo.msk.ru/blog/gontmaher/637242-echo/
[11] See https://tass.ru/info/4853990
[12] e.g. see https://finance.rambler.ru/money/38397957-kopeyki-pochemu-v-rossii-nizkie-pensii
[13] See https://pensiagid.ru/poleznaya-informaciya/skolko-pensionerov-v-rossij.html
[14] See https://www.bbc.com/russian/russia/2010/09/100908putin_pensions_politics
[15] e.g. see https://www.newsru.com/finance/09may2013/pensii.html
[16] See https://youtu.be/nZs2ajTKpRw

3 Data

In my study, I utilize two datasets. The first dataset being used is the quarterly data from the Household Budget Survey (HHBS) by The Federal State Statistical Service of Russia (FSSSR).[17] HHBS is a nationally representative survey. I use the data on observations between 2003 and 2015. FSSSR provides databases for each quarter of the year. Furthermore, for each quarter there is a database with the information about income, then there is a separate database with the information about the source of income, and finally there is another dataset about the characteristics of households' members. More than 100,000 individuals within approximately 50,000 households are surveyed each quarter.

The second dataset being used is the Russian Longitudinal Monitoring Survey - Higher School of Economics (RLMS-HSE).[18] The RLMS-HSE is an annually run nation-wide representative study designed to analyze consequences of the Russian reforms on the welfare of Russian households and individuals. RLMS-HSE contains questions about individual's objective and subjective well-being. Each year approximately 15,000 individuals who comprise more than 5,000 households are surveyed. The survey is conducted in the period between October and December. I use the data on observations between 2000 and 2018. In this paper, all the answers of the respondents to subjective questions (e.g. related to life satisfaction) are normalized to a segment from 0 to 1. If necessary, answers are reversed so that the higher number would mean that respondent's situation is better.

In this study, there will be terms which will be specific for this paper only. The "retired household" is a household, which has pension as the main source of income. The "head of a household" is a member of a household, who brings the major part of the household's income. The "retired people" are those, who stopped working a year before the survey and receive pension due to their age. The relative income is defined in this paper as the income of an individual divided by an average income of all respondents that year or a quarter of that year. CPI[19] is used in order to account for inflation. The "respondents of working age" are people, who are not eligible for pensions, but who are older than 18 years of age. "RW" stands for the percentage of the respondents of working age, who worked for the whole quarter. "NLFJ" means the percentage of the respondents of working age, who both did not work and did not look for a job for the whole quarter. The "household employment" is the employment of the head of a house and/or her/his spouse.

[17] See `http://obdx.gks.ru/`

[18] See `https://www.hse.ru/en/rlms/`

[19] See `http://www.gks.ru/free_doc/new_site/prices/potr/tab-potr1.htm`

4 Empirical Strategy

Firstly, I explore jumps in the 1^{st} quarter of 2010 and in the years of anniversaries of World War II Victory using the following specifications:

$$Y_{it} = const + \beta_1 * I_{t>=2010} + \beta_2 * f(t) + \beta_3 * I_{t>2010} * f(t) + \gamma * g(t) + \epsilon_{it},$$

$$Y_{it} = const + \beta_1 * I_{Anniversary} + \beta_2 * I_{OneYearAroundAnniversary} + \beta_3 * f(t) + g(t) + \epsilon_{it},$$

where Y_{it} is the variable of interest, $f(t)$ stands for the linear trend variable, and $g(t)$ stands for the time-fixed effects (quarter dummies). The difference-in-differences technique is implemented by the following specification:

$$Y_{it} = const + \beta_1 * I_{t>=2010} * I_{RetireeInHH} + \beta_2 * I_{RetireeInHH} + \beta_3 * I_{t>=2010} +$$

$$+\beta_4 * f(t) + \beta_5 * I_{t>2010} * f(t) + g(t) + \epsilon_{it},$$

where $I_{OldInHH}$ is an indicator for the presence in the household of a person who receives pension. Standard errors are clustered by regions and the types of settlement. Variables of interest, Y_{it}, stand for the indicator that illustrates that a person worked for the whole quarter of the year (see Table 3) and the indicator that shows that a not employed person did not look for a job for a whole quarter of the year (see Table 4).

5 Main Results

Lyashok (2017) identified and analyzed the sharp increase in pensions in 2010 with RLMS only. I support the identification and perform the analysis of that jump in pensions using more frequent HHBS in addition to RLMS. Both graphs and regressions provide evidence of a discontinuity in the income of the retired households and individuals in the 1^{st} quarter of 2010 (see Table 1, Figure 2). Regressions show that the jump in income of the retired households and individuals was around 30%, which is in line with Lyashok's results.

Lyashok (2017) concentrated on the influence of the 2010 pension rise on the retirement decisions. I continue Lyashok's analysis in four directions. Firstly, I check for the heterogeneity of that pension increase with respect to the pensioners' place of living. Next, I explore the heterogeneity of the effects of that pension rise and study the impact of that 2010 jump in pensions on other groups of population. Finally, I analyze how this pension increase influenced the objective and subjective well-being of pensioners.

As Figure 3 shows, the retired individuals living in cities are always better-off than those residing in rural areas in terms of real income. The 2010 pension increase appears to be homogeneous with respect to the place of living. The discontinuity is clear in the relative income of both types of retired individuals, rural and urban (see Figure 4).

Lyashok (2017) analyzed changes in retirement decisions using RLMS data. I show the discontinuity in the labor force participation of pensioners via more frequent HHBS data (see Figure 5). The upward trends in the employment of senior people can be a result of the improvements in health (see Yakovlev (2018)). In 2010, the percentage of individuals who were not working went up by 5% from 69% to 74%, which is similar to the results of Lyashok (2017). Rural labor markets were hardly influenced by the 2010 pension increase, while those of Moscow and Saint-Petersburg, were influenced dramatically (see Figures 6 and 7). Due to these changes in retirement decisions, the average age of working pension receivers changed. The discontinuity in the average age of working male pensioners is considerable (see Figure 8). The retirement was hardly forced. Respondents almost always claim that the retirement was their own decision (see Figure 9). All the abovementioned demonstrates that the 2010 rise in pension resulted in a jump in retirement.

The pension increase in 2010 influenced employment not only among pension receivers, but among younger people as well. Respondents of working age who live with pensioners were effected most (see Figures 10 and 11). Difference in differences technique is used in order to see the impact of coresidence with pensioners on the relation to employment among such respondents (see Tables 2, 3). All these changes led to a jump in the percentage of the retired households (see Figure 12).

The structure of families changed sharply in 2010. Considering the rate of households with pensioners only to households where there are other individuals, one can see a drop in the percentage of pensioners living alone (see Figure 13). Besides, in the households with pension receivers the presence of children increased (see Figure 14). The consequence of these changes was an increased number of the retired households' members (see Figure 15). Remarkably, the real income of the retired households per capita did not have a discontinuity in contrast to the total real income of the retired households (see Figure 16).

The 2010 increase in pension improved life of retired individuals in several dimensions. On average the retired people were more concerned about necessities than younger ones, but after 2010 that changed (see Figure 17). The rate for the expenses on food as a share of the total spending by the retired households dropped (see Figure 18). Rural retired households tended to spend less on food than urban ones before 2007. However, after 2007 this rate became similar for both types of households.

The retired persons noticed changes in their relative and absolute real income as it is shown in Appendix C. After 2010, they estimated their economic level to be higher than previously. The trends in the estimations of previous income and the expectations changed in 2010. All that was capable of changing the level of their life satisfaction.

Finally, there is evidence that life satisfaction by the retired people experienced a jump in 2010 (see Figure 19). Especially, the less wealthy rural individuals were influenced. Despite all the differences in life style and income, rural and urban retired individuals on average have approximately the same level of life satisfaction. The life satisfaction had a positive trend. However, for the retired individuals it seems to hover around 0.5 after 2010, which means that these people on average are ambiguous about how satisfied with life they are.

6 Some Historical Evidence, Robustness Checks, and the Heterogeneity

The pension increase in the 1^{st} quarter of 2010 is a part of a long ongoing series of rises. Pensioners' income changes have a very special pattern. The relative income of the retired individuals and households follows the cycles of the anniversaries of the Victory in World War II (see Figure A1). Nothing of a kind happens with the relative income of other groups of individuals (see the Appendix D). Regressions (see Table A1) show that there are peaks in the anniversaries relative to a trend and years around anniversaries.

I check for the absence of discontinuities in pre-determinant covariaties that may potentially confound my results. The rate of pensioners as a share of the population increased smoothly beetween 2004 and 2015 years (see Figure A2). I also look at the percentage of pension receivers with higher education. Figure A3 illustrates, nothing extraordinary happened with this percentage in the period of pension increase.

I do robustness checks for three of my major results. At first, I do a robustness check for extra entry into retirement. Naturally, the subgroups of pensioners are expected to experience the influence pension increase as well. Figure A4 shows a discontinuity in the percentage of retired people among people older 65. Thus, the result of extra entry into retirement is robust to the choice of this older age group.

Next, I do robustness check for the jump in NLFJ (see Table A2). I include the indicators of jumps in 2009 and 2011, and I also include the products of these indicators of jumps and the indicators of the presence of pensioners in households in the basic regression.

The coefficients for these products of indicators are statistically insignificant. However, the coefficient for the product of the indicator of a jump in 2010 and the indicator of a pensioner's presence in a household remain statistically significant. This means that my result on the discontinuity in NLFJ is robust for this check.

Finally, I do a robustness check for the jump in the number of the retired households. To do it I analyze a specific industry. It is natural to expect the effect of pension increase on employment to be the most obvious for unskilled labor. I looked at wholesales and retail sales as such menial work. Based on HHBS data, I could measure employment only of households' head and her/his spouse. I concentrated on the employment of the households' head. Figure A5 shows a discontinuity in the employment of households' heads working in wholesales and retail sales for households with pension receivers and the absence of any jumps in that for households without pension receivers. Thus, my result on the discontinuity in the number of the retired households is robust for this check.

Then I check for the heterogeneity of the effect with respect to the type of organization a person worked in and with respect to person's education. In order to see the former type of heterogeneity I look at the following ratio: the number of employed retirees living in a certain type of household to all retirees. I consider households with the head and the spouse of a head worked only in public sector, only in private sector, and in both public and private sectors. I see that in absolute terms the public sector was influenced most (see Figure B1). However, this is driven by the size of the public sector in Russian economy. If one looks at log percentages, it becomes apparent that the influence of pension increase was similar across different sectors in relative terms (see Figure B2). At last, I consider the heterogeneity with respect to pensioners' education. The effect of pension increase on the labor participation of retirees with and without higher education is very similar both in absolute and relative terms (see Figures B3, B4).

7 Discussion

The relative income of retirees follows cycles which are driven by the anniversaries of the Victory in World War II. The relative income of other groups of people who receive money from the federal budget depends on these anniversaries much less. The possible opportunistic cycles for pensions are a minor issue compared to these "anniversary" cycles. Thus, the Russian government does not appear to use increases in pensions specifically to win elections.

As noted, the most significant increase by magnitude happened in 2010, the 65th anniversary of the Victory in World War II. The extraordinary feature of the 2010 pension increase can arise from the fact that it was the only World War II Victory anniversary during the presidency of Dmitry Medvedev. The absolute real income of pension receivers tended to rise before 2010. Then there was a significant jump in the income of the retired households and pensioners in 2010. Later the real income of pensioners did not change significantly.

The result of the 2010 pension increase was a rise in the number of unemployed people who were not looking for a job for a whole quarter. From 2003 to 2015 there was an inclination that pensioners people got more and more employed. Only the sharp 2010 pension increase was capable of changing this tendency. This signals the presence of a reference point in pensioners' mind, when they consider labor force participation decisions. It was not only pension receivers who stopped working and looking for a job, but people living with them as well. Due to pre-existing situation (see Figure 7) and different employment incentives (e.g. consider the possibility of household production for rural dwellers), the effect on labor markets in rural areas and in megalopolises was quite heterogeneous. However, for cases, when employment incentives were not so obviously different, the effect was rather homogeneous.

FSSSR does not report an outstanding hike in unemployment in 2010, but it does not contradict my findings. FSSSR, in fact, notes some specific features of that year.[20] FSSSR's estimation uses ILO definitions of unemployment, which are very different from my RW and NLFJ. The absence of the unemployment peak in FSSSR's reports is a matter-of-course.

What can policy makers learn from my findings? The share of persons living with pensioners among all people not eligible for pension throughout 2005–2015 was quite large, specifically 17%–19%. My findings suggest that the increase in pension can result in falling RW and rising NLFJ in this group. If some pension increase in Russia leads to $X\%$ rise in retirement, it will also lead to $0.4{*}X\%$ drop in labor force participation among younger individuals who live together with pension receivers or who will start living together with pensioners after this pension increase. In addition, it appears that the effect of changes in the pension system influences rural areas and large cities very differently. The government should take that into account when introducing further changes.

[20] See `http://2020strategy.ru/data/2011/07/15/1214722037/2.pdf`

As stated above, a jump in the percentage of people who were not working — among individuals below the pension age and living with pensioners — was identified. However, the trends of employment of these individuals and their peers living separately from pensioners did not change. These two results combined can be used in the debates about the current pension reform. Some politicians say that senior people who will stay at work longer due to the new pension age will take jobs of younger people.[21] Lyashok (2017) provided evidence against this view. Lyashok showed that senior people and youth mostly work in different economic sectors of Russia and do not appear to compete for the same job positions. The results of my paper speak against the substitution between older and younger workers from another point of view. In particular, my paper illustrates that younger individuals don't massively take job positions which became vacant after senior people retirement. In contradiction with the view of substitution, some group of younger people, namely those living with pensioners, quits jobs too.

The evidence from the 2010 Russian pension increase also supports the idea that significant increases in income have a positive influence on the coresidence of generations. As the comparison of total and per capita real income of the retired households shows, people absorbed additional money from the government by changing their coresidence decisions. Since people react well to financial incentives, the government can exploit this relationship of coresidence decisions and financial incentives to nudge younger people to live together with seniors. Coresidence with other people is important for older generations — loneliness is often listed as one of the biggest fears for this group.[22]

Finally, I observe an effect on life satisfaction. The retired people noticed changes in their pension, which can be seen based on their self-estimated economic level, their estimation of the income of their families, and their expectations about future incomes. All the abovementioned could potentially increase life satisfaction. The findings of this paper suggest that this increase indeed took place.

[21] e.g. see `https://rg.ru/2015/03/12/kvoti.html`

[22] See `https://fom.ru/nastroeniya/12596`

8 Conclusion

The paper studies the consequences of the pension increase in Russia in 2010. That rise led to an approximately 5% increase in the share of pension receivers who chose to retire. The effect on the labor market depended heavily on the type of settlement. In Russian biggest cities the effect was greater. One out of four employed pensioners left the labor force in Moscow and Saint-Petersburg. On a relatively unexpected part, I find an externality on people who live with pensioners. The regression shows that in the 1^{st} quarter of 2010 there was no jump in the percentage of unemployed people not looking for a job for a whole quarter among those who lived separately from pensioners. Meanwhile, the increase in this percentage among those who lived with pension receivers was a little above 2%. The evidence from the 2010 Russian pension increase can be used as an argument for the absence of substitution between older and younger workers. Besides, the coresidence decisions were influenced by the 2010 pension increase. The number of pensioners who lived alone went down. Finally, there is evidence that the rise in pension influenced the opinions and views of Russian retired individuals, e.g. it increased their life satisfaction.

The research can be extended in different ways. The findings of my research can be included in the study of the influence of social benefits on labor force participation and coresidence decisions on the whole. Since the labor markets of Moscow and Saint-Petersburg have experienced the largest influence of the 2010 pension increase, more rigorous analysis of the effects of this pension increase on the labor markets of these cities is of particular interest. Finally, the consequences of the 2010 pension increase can be studied from the view points of the structural model of interactions between spouses of senior age and dynamic models of retirement decisions.

References

Afanasiev, S. A. 2003. "Pension Reform in Russia: First Year of Implementing." Discussion Paper 146, Center for Intergenerational Studies, Institute of Economic Research, Hitotsubashi University.

Bianchi, S. M. 1987. "Living at home: Young adults' living arrangements in the 1980s." Unpublished paper, Center for Demographic Studies, U.S. Bureau of the Census, Washington, DC.

Brickman, P., Coates, D., and Janoff-Bulman, R. 1978. "Lottery winners and accident victims: Is happiness relative?" Journal of Personality and Social Psychology, 36(8), 917–927.

Clark, A., Frijters, P., and Shields, M. A. 2007. "A survey of the income happiness gradient." Journal of Economic Literature.

Danielyan V. A. 2016. "Индивидуальные детерминанты пенсионного возраста: обзор исследований." Вестник Института экономики Российской академии наук. N 3. С. 171 - 202.

Day, M., and Weber, A. 2016. "Nonparametric Evidence on the Effects of Financial Incentives on Retirement Decisions." American Economic Journal: Economic Policy, 8 (4): 160-82.

De Castello Branco, M. 1998. "Pension Reform in the Baltics, Russia, and Other Countries of the Former Soviet Union (Bro)." IMF Working Paper, Vol. , pp. 1–40. Available at SSRN: https://ssrn.com/abstract=882230.

Durante, R. and Zhuravskaya, E. 2016. "Attack When the World Is Not Watching? U.S. News and the Israeli-Palestinian Conflict." Journal of Political Economy.

Goldscheider, F. K., and Da Vanzo, J. 1989. "Pathways to independent living in early adulthood: Marriage, semiautonomy, and premarital residential independence." Demography 26: 597–614.

Gontmakher, E. 2009. "The Pension System of Russia after the Reform of 2002: Challenges and Prospects." Journal of the New Economic Association, no. 1–2: 190–206.

Gruber, J., Kevin, M., and Wise D. 2009. "Social Security Programs and Retirement Around the World: The Relationship to Youth Employment, Introduction and Summary." NBER Working Paper No. 14647 January 2009, Revised May 2009 JEL No. H3,H5,J1,J2.

Gurvich, E., and Sonina, Y. 2012. "Microanalysis of Russia."
Voprosy economici, vol. 2.

Hauner, D. 2008. "Macroeconomic Effects of Pension Reform in Russia." IMF Working Papers, Vol. , pp. 1-23, 2008. Available at SSRN: https://ssrn.com/abstract=1266534

Kovrova, I., Di Ricerca, D., and Economiche, S. 2019. "Shaping a Pension System: Distributive and Incentive Effects of the Russian Pension Reforms."

Lyashok V. Y. 2017. "Пенсии, здоровье и спрос на труд как детерминанты экономической активности населения старшего возраста в России". Диссертация на соискание учёной степени кандидата экономических наук.

Maleva, T., and Sinyavskaya, O. 2010. "Pension Age Increase: Pro et Contra." Journal of the New Economic Association, New Economic Association, issue 8, pages 117-137.

Schroder-Butterfill, E. 2004. "Inter-generational family support provided by older people in Indonesia." Ageing and society, 24(4), 497-530.

Sinyavskaya, O. 2005. "Pension Reform in Russia: A Challenge of
Low Pension Age."

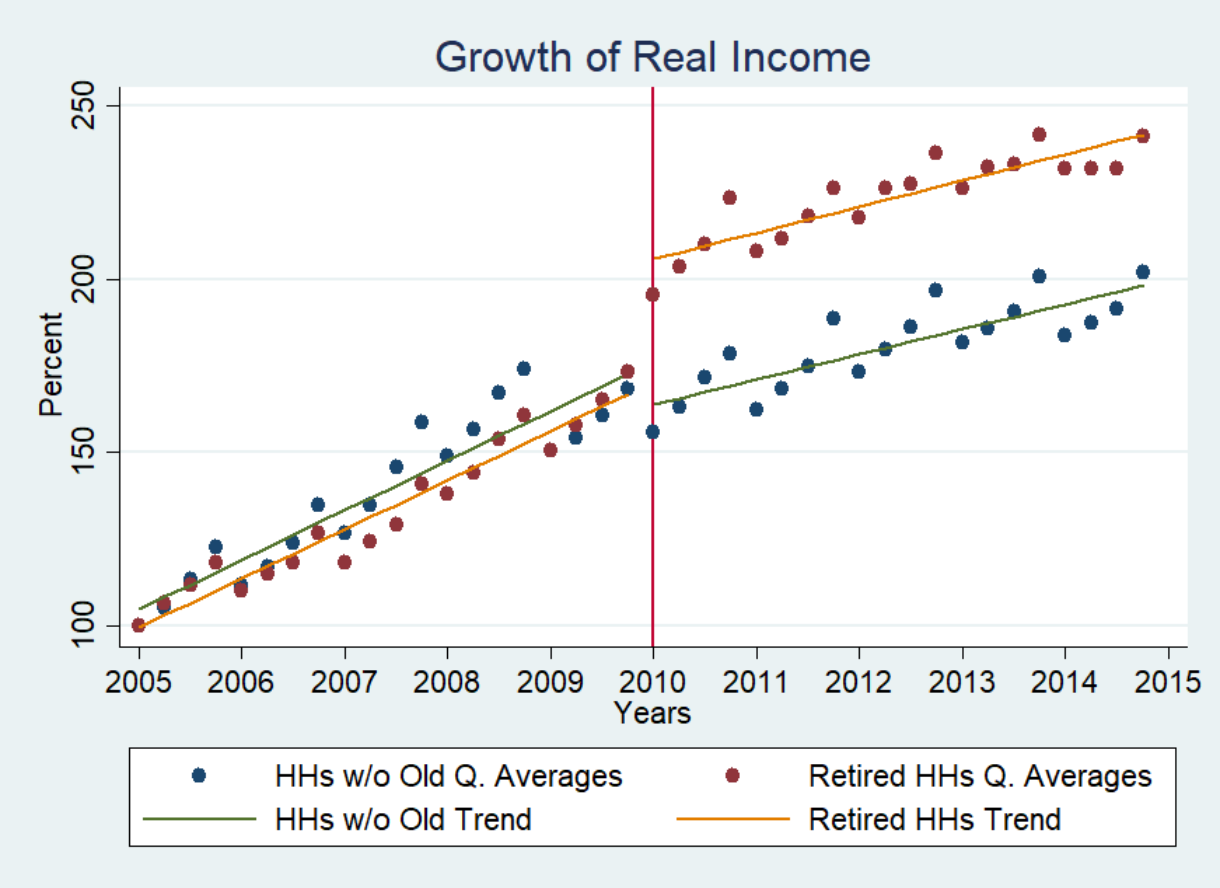
Solovyev, A. 2013. "The Macroanalysis of Russian Pension System."
Voprosy economiki, vol. 4.

Yakovlev, E. 2018. "Demand for Alcohol Consumption in Russia and Its Implication for Mortality." American Economic Journal: Applied Economics, 10(1):106-49.

Young, C. 1987. "Young people leaving home in Australia: The trend towards independence." Australian Family Formation Project Monograph No. 9. Melbourne: Australian Institute of Family Studies.

Figures

Figure 1 The correlation between average real income of households without pensioners and that of households living on pension



Note: The graph is based on FSSSR Data.

Figure 2 The retired HH real income

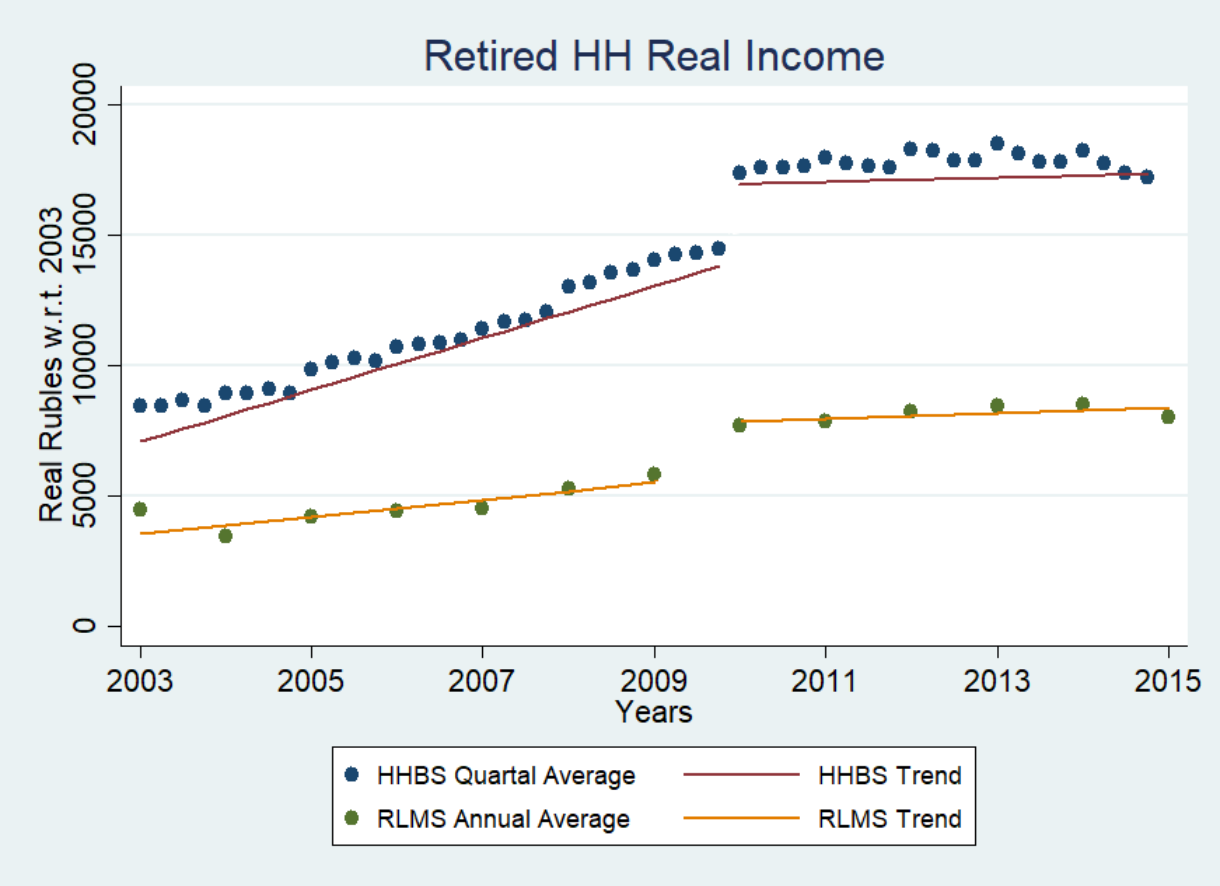
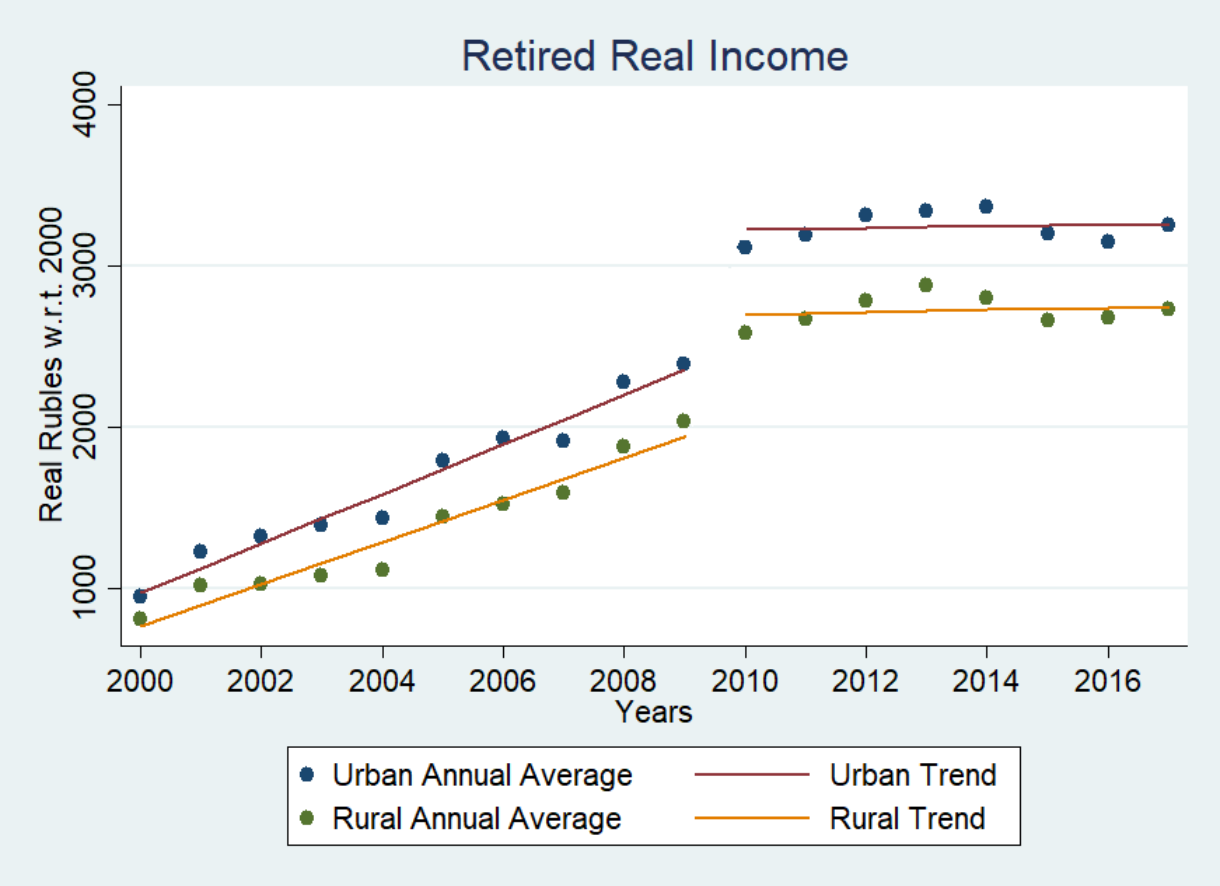
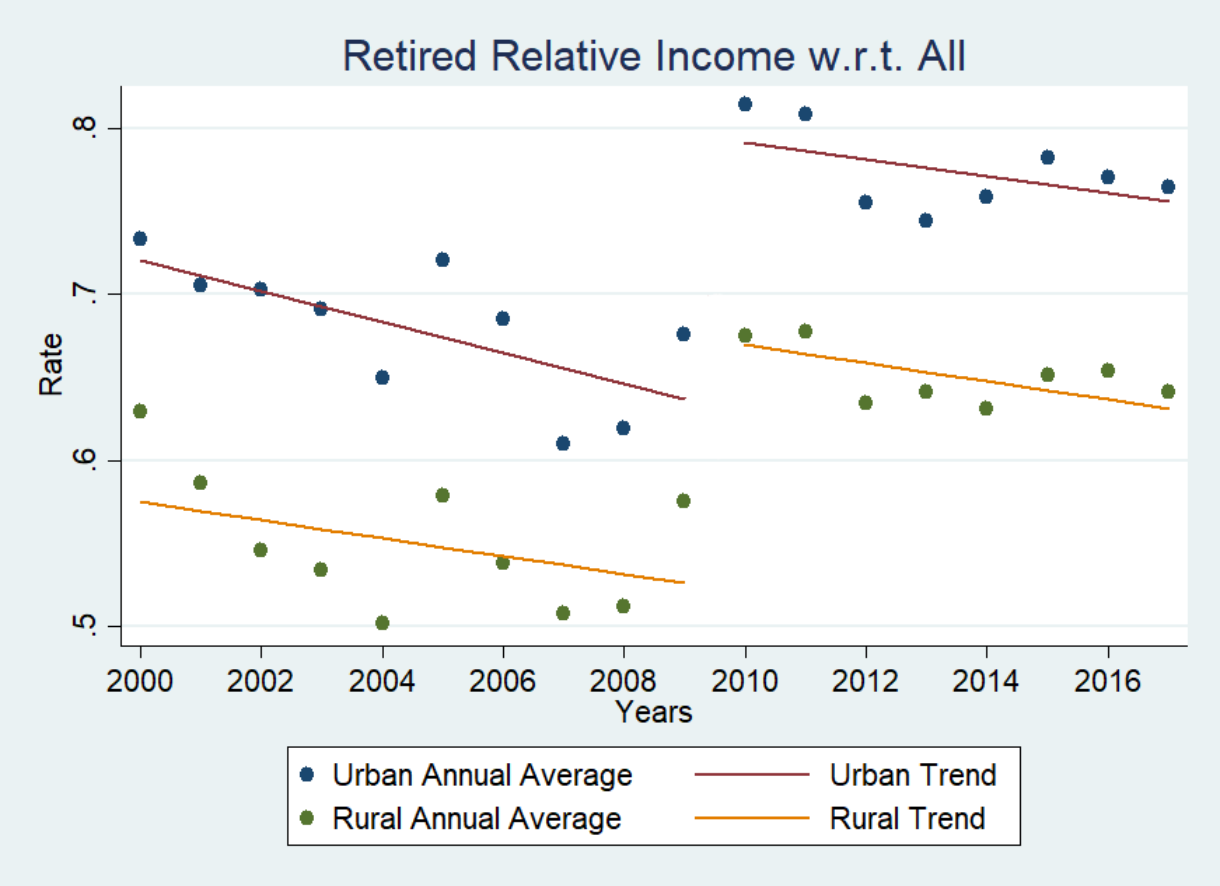


Figure 3 The real income of retired people



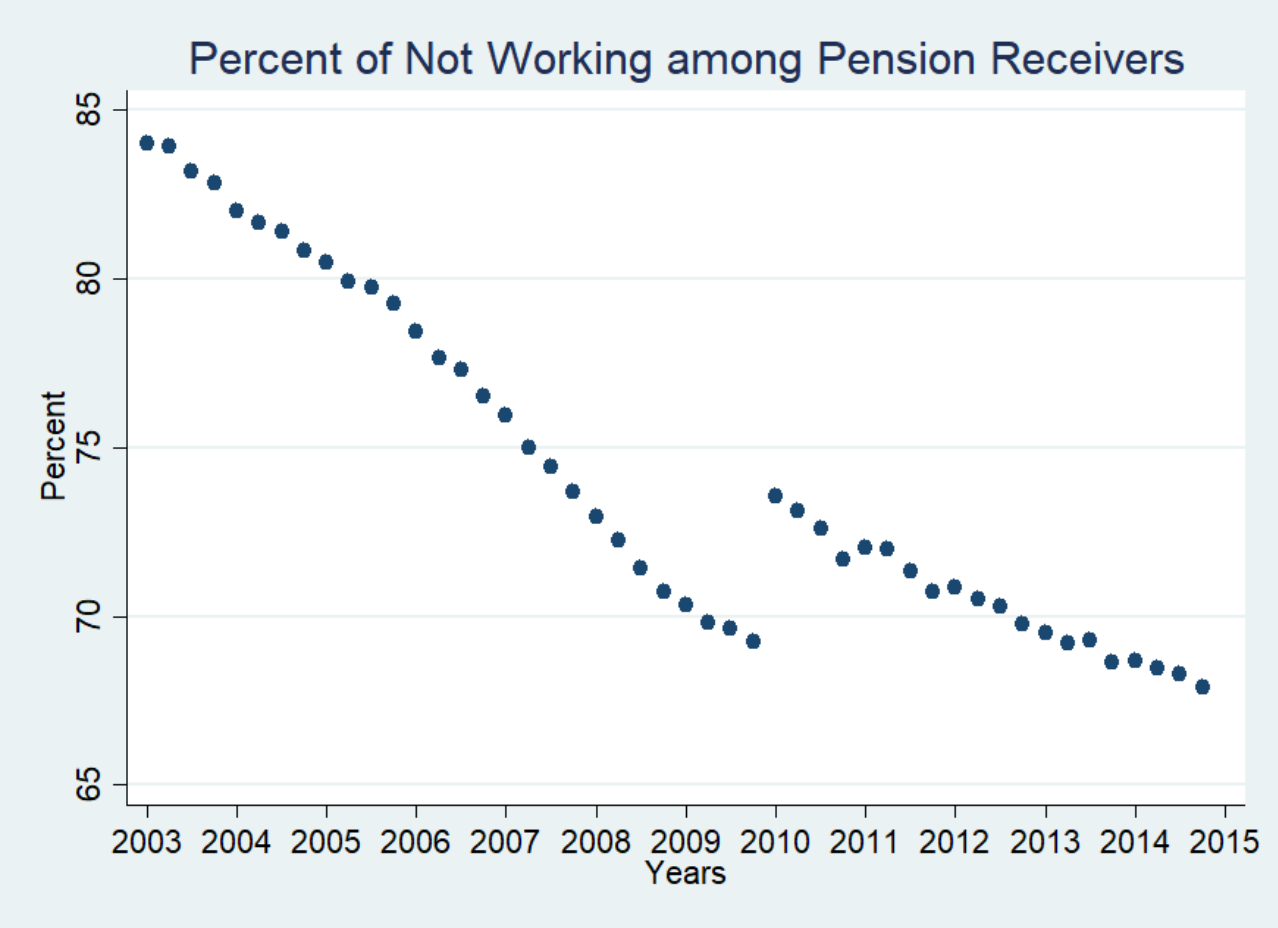
Note: The graph is based on RLMS Data.

Figure 4 The relative income of retired people w. r. t. all



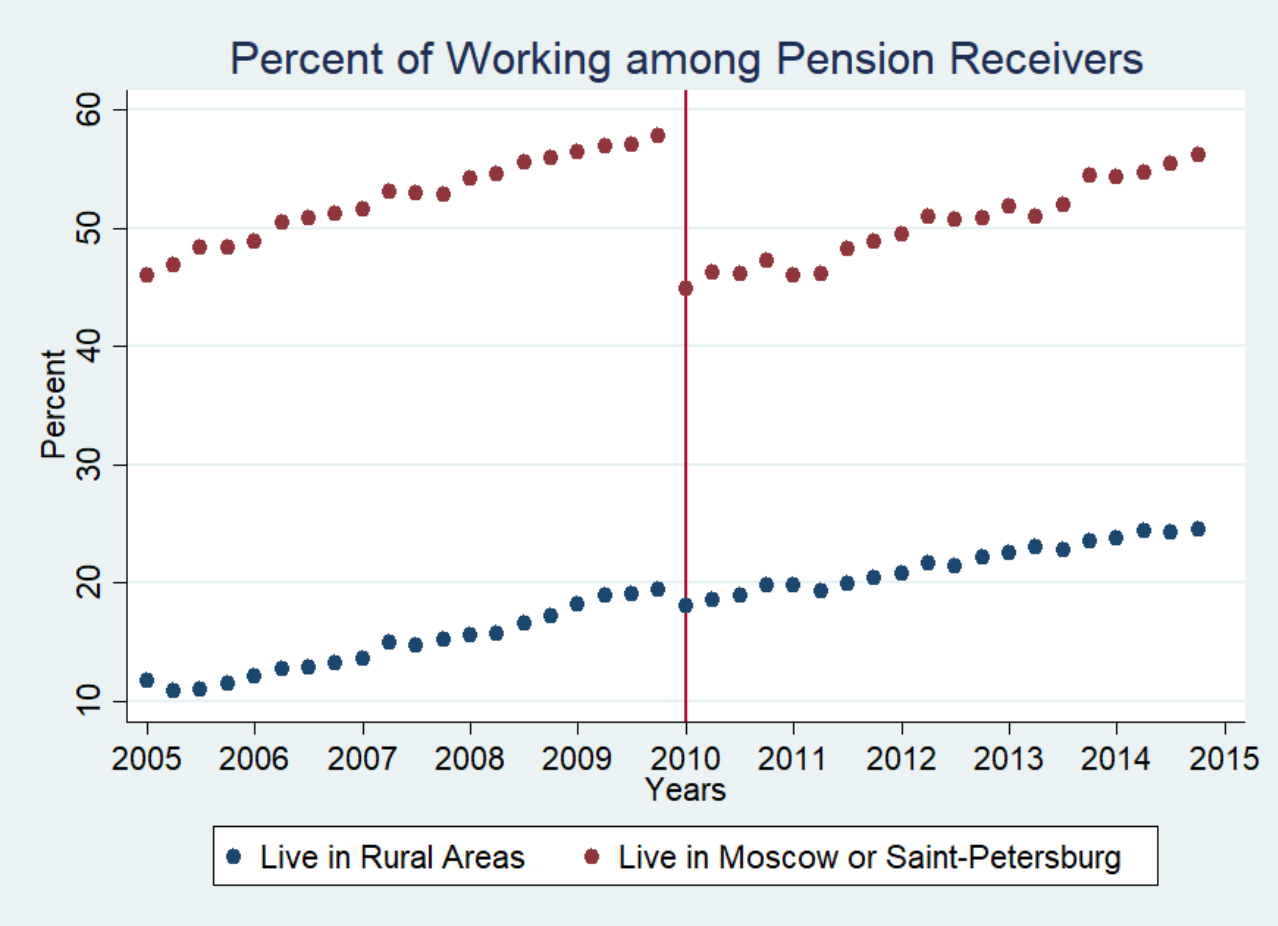
Note: The graph is based on RLMS Data.

Figure 5 The percentage of not working among pensioners



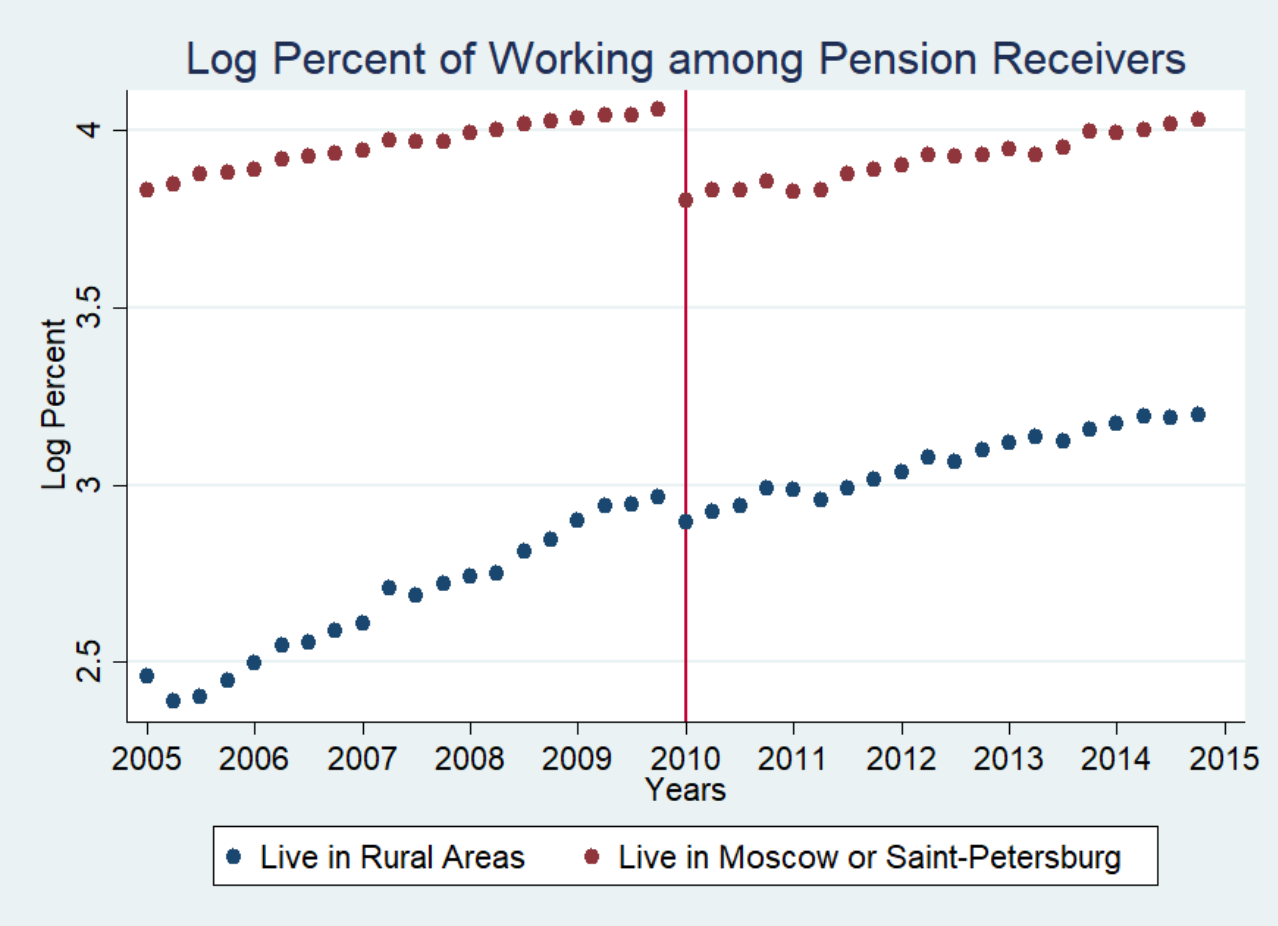
Note: The graph is based on FSSSR Data.

Figure 6 The percentages of working among pension receivers living in rural areas and in Moscow or Saint-Petersburg



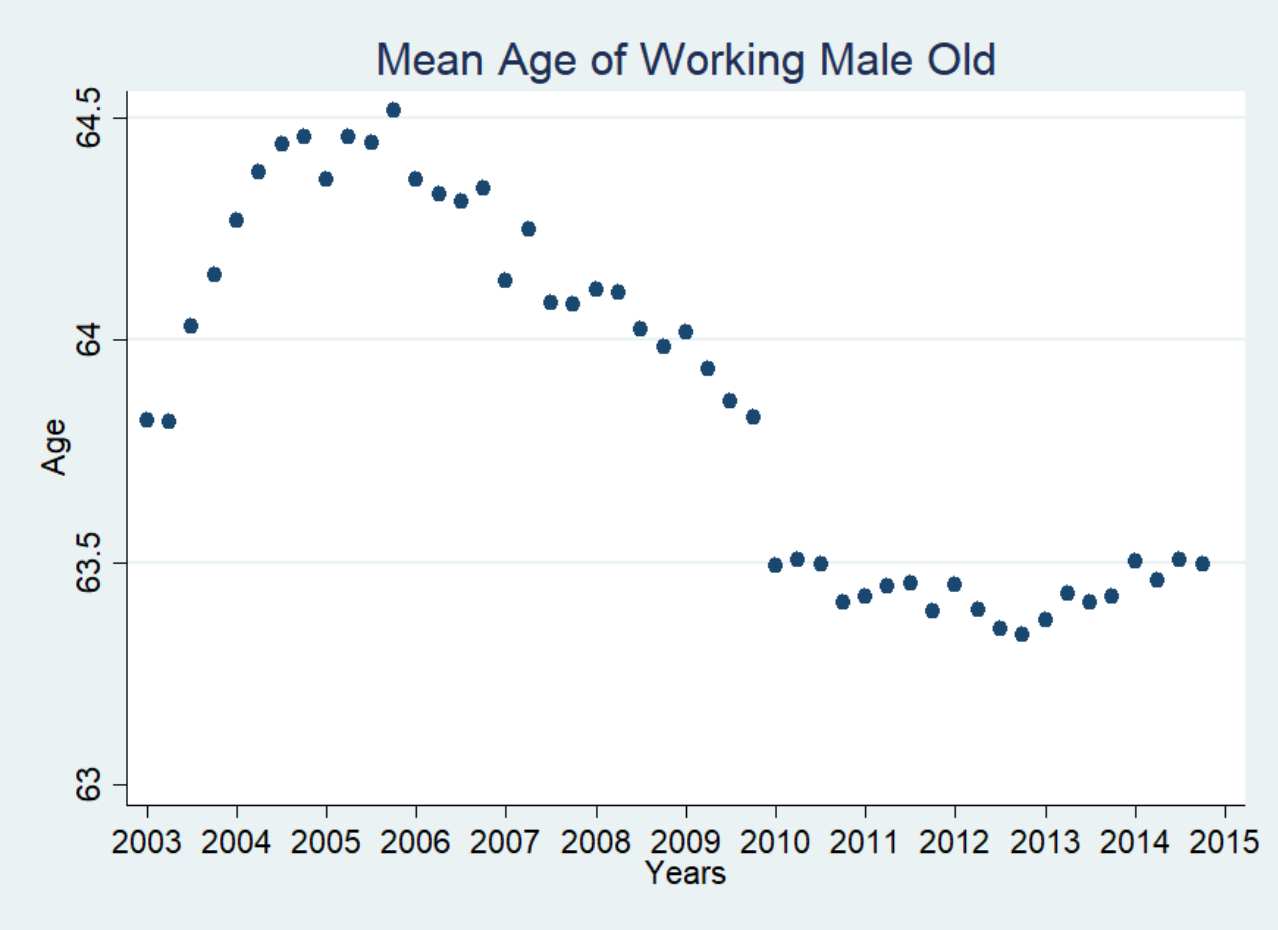
Note: The graph is based on FSSSR Data.

Figure 7 The log percentages of working among pension receivers living in rural areas and in Moscow or Saint-Petersburg



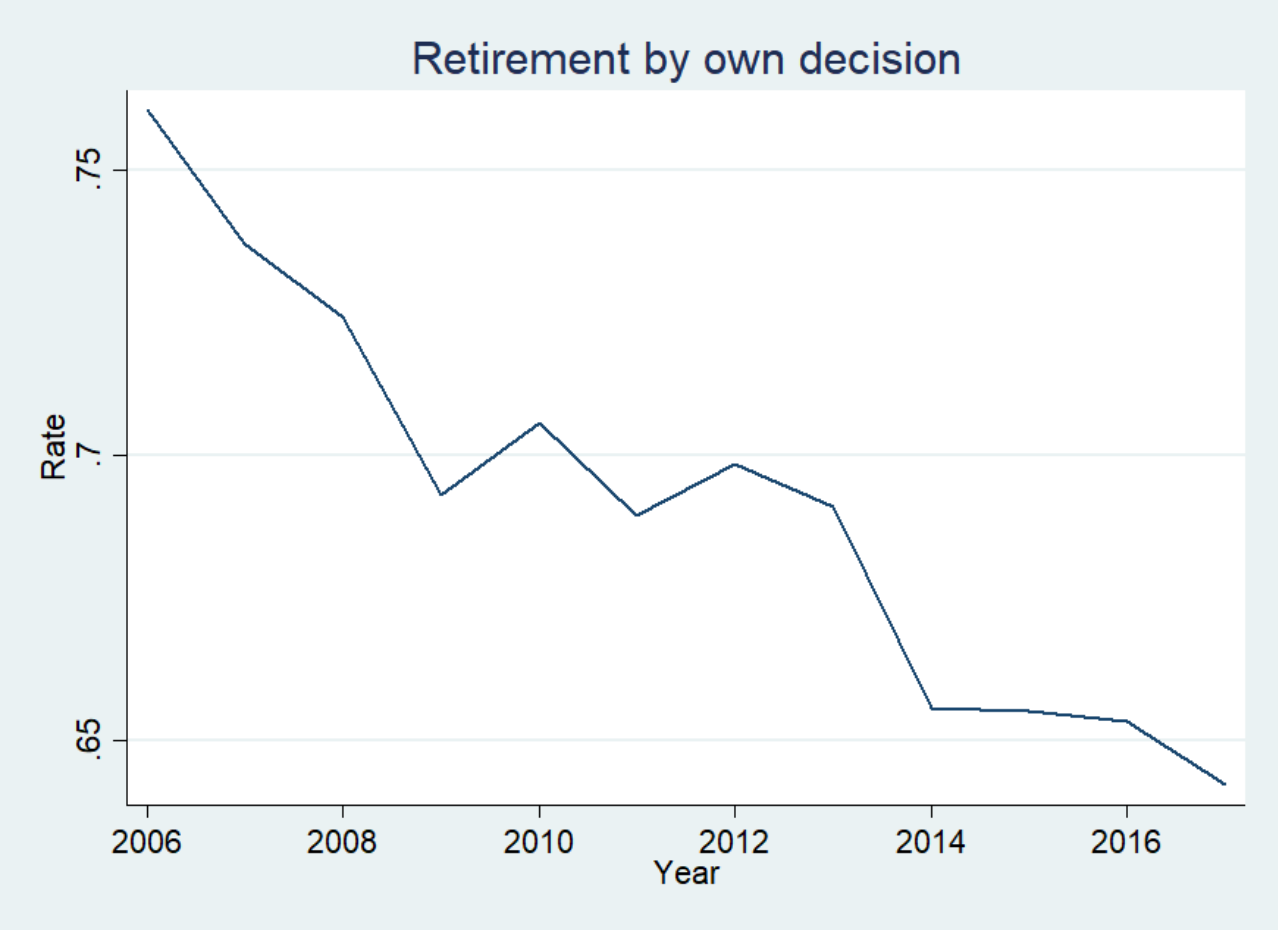
Note: The graph is based on FSSSR Data.

Figure 8 The average age of working males older than retirement age



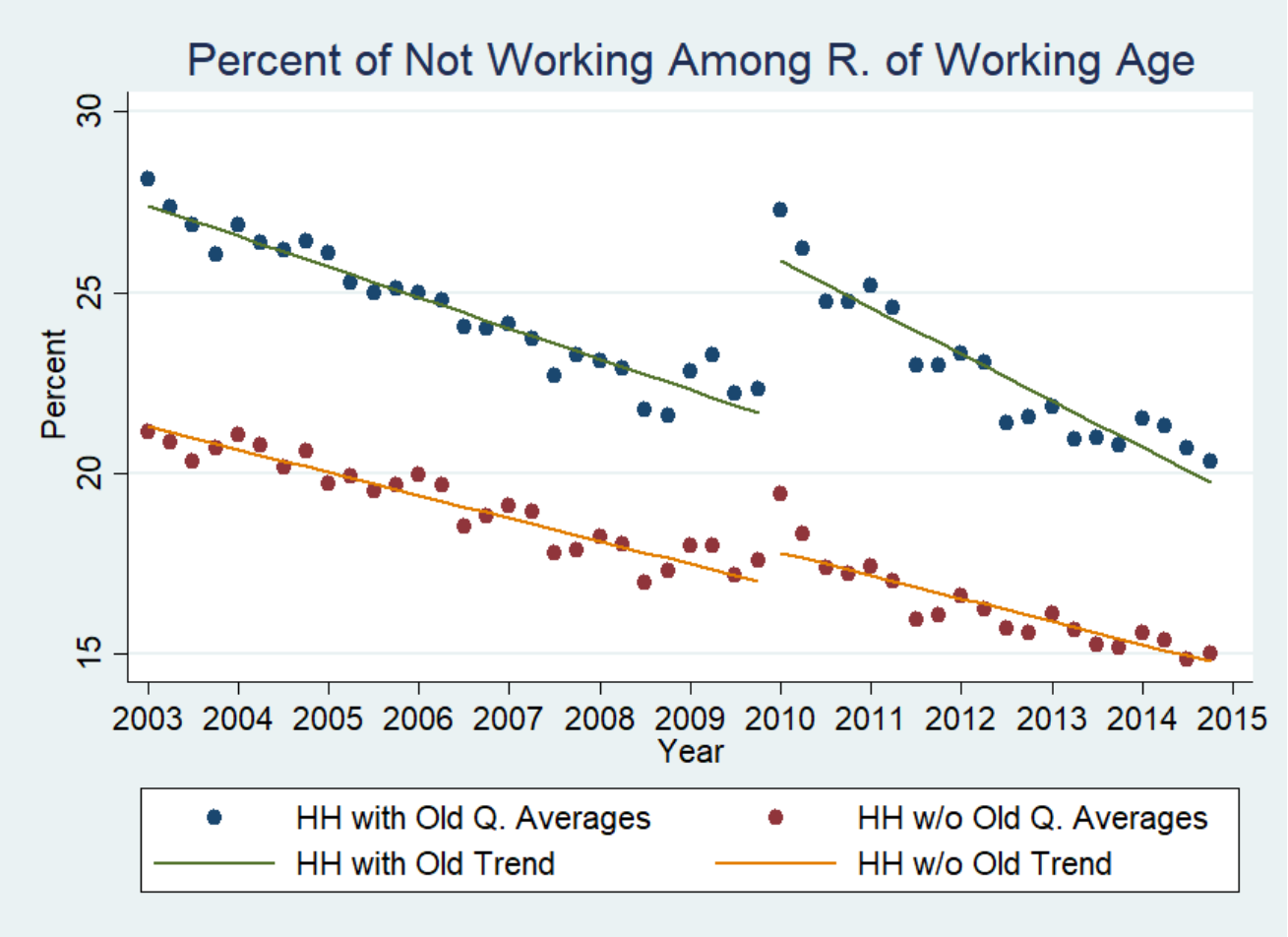
Note: The graph shows the average age of males, who are older than "retirement age" and continue to work. The graph is based on FSSSR Data.

Figure 9 The share of pension receivers who retired by own decision



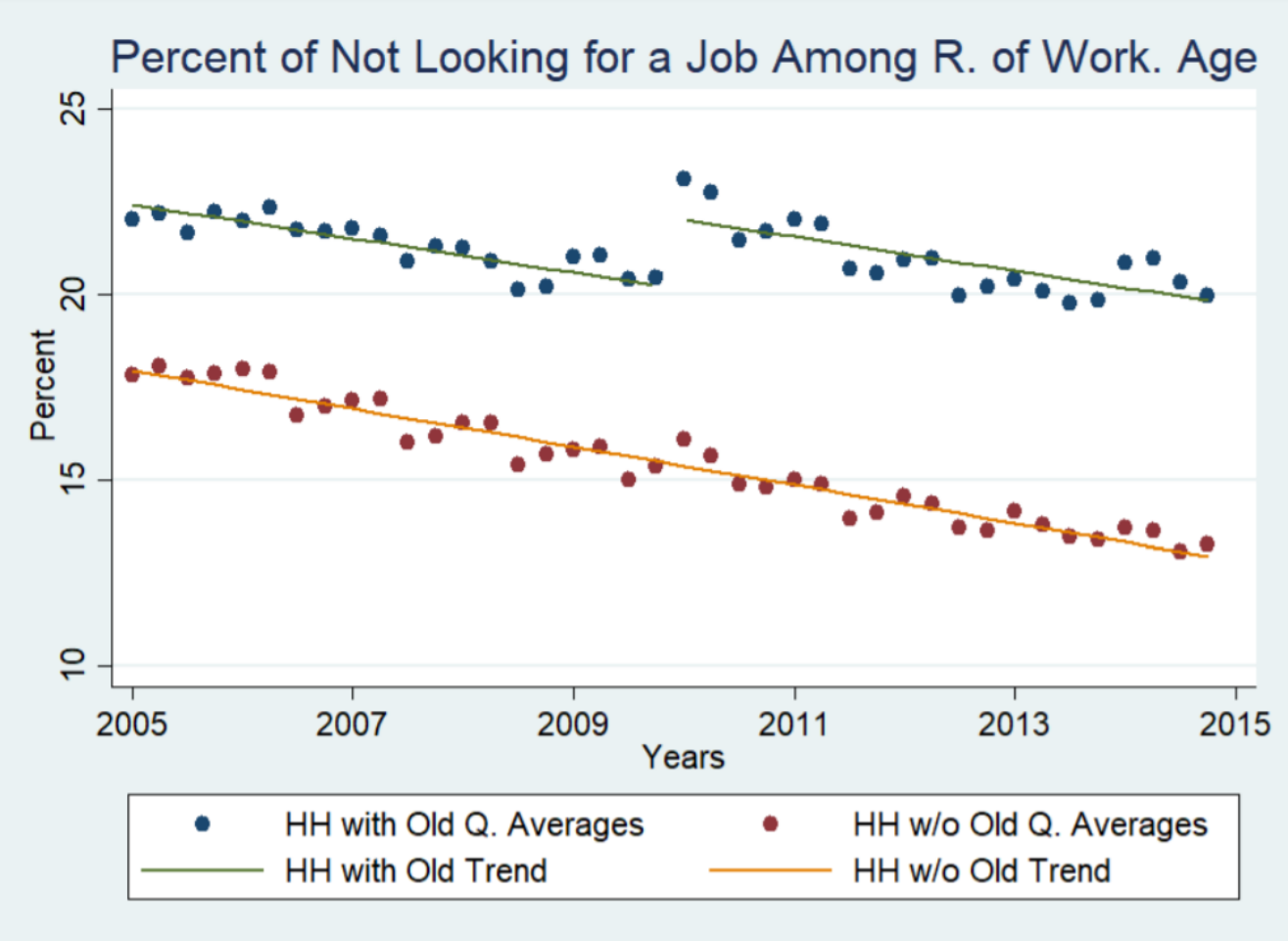
Note: The graph is based on RLMS Data.

Figure 10 The percentage of not working among the respondents of working age



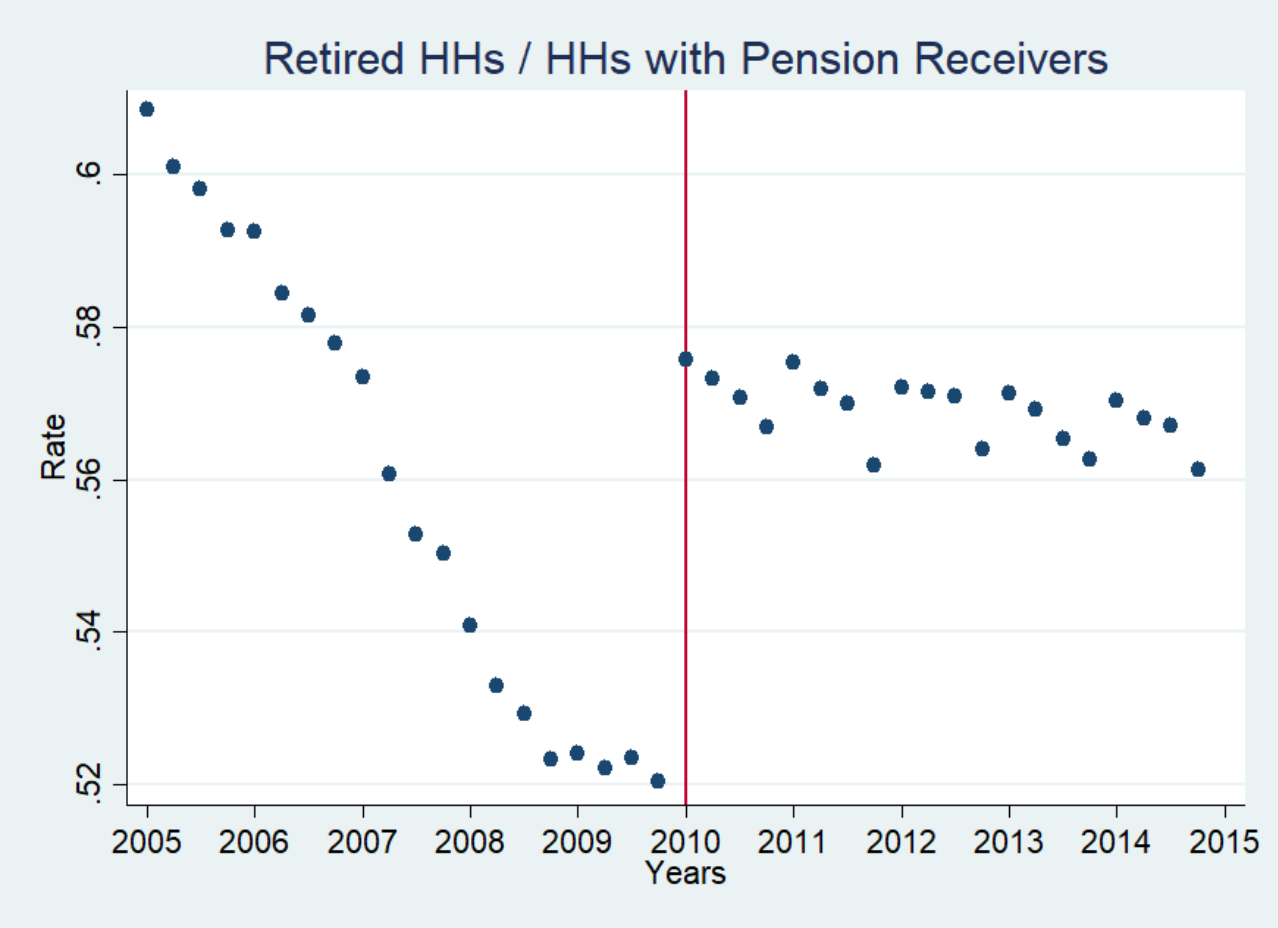
Note: The figure shows the percentage of the respondents of working age who did not work for the whole quarter. The graph is based on FSSSR Data.

Figure 11 The percentage of not looking for a job among the respondents of working age



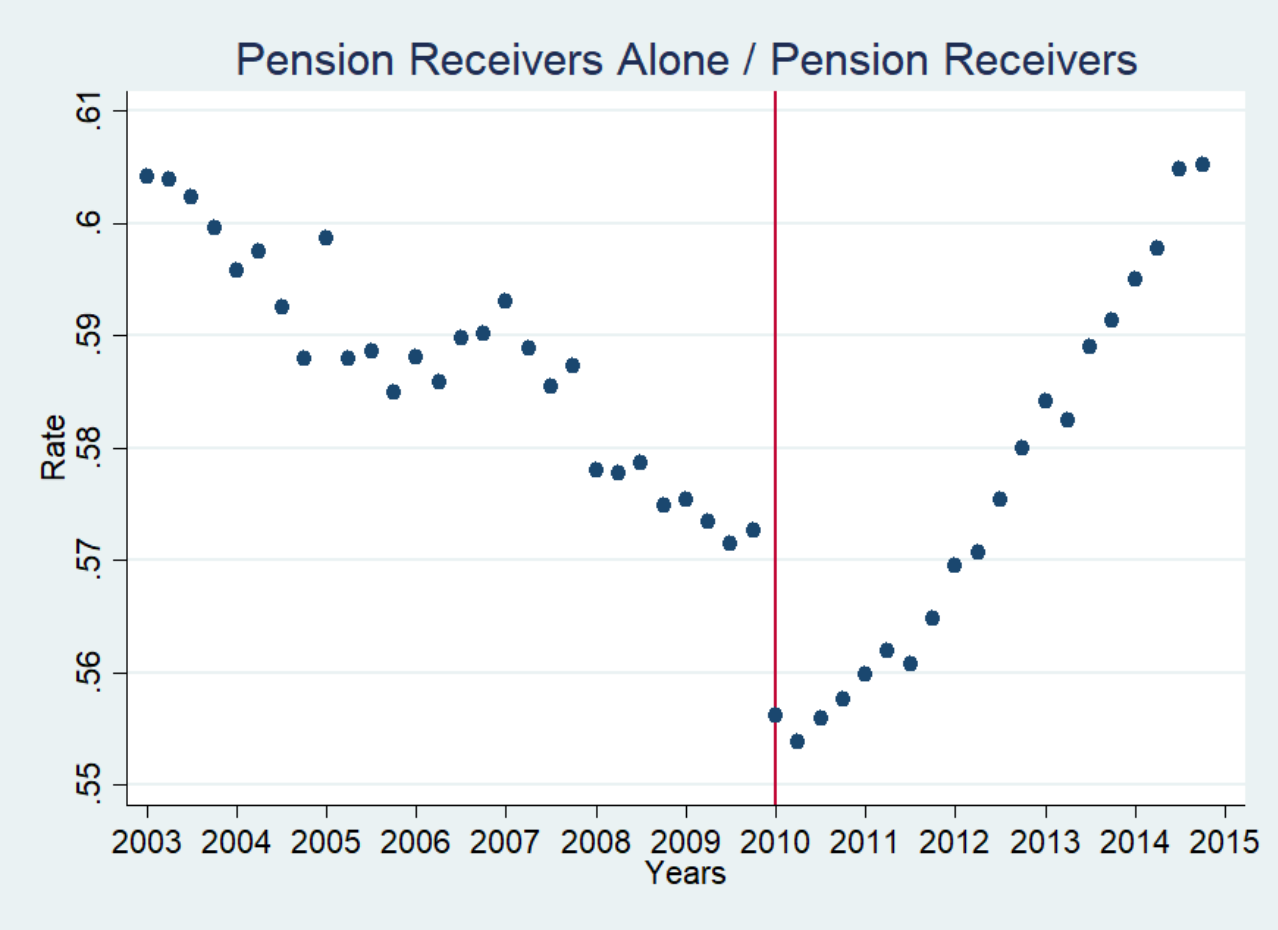
Note: The figure shows the percentage of the unemployed respondents of working age who did not look for a job for the whole quarter. The graph is based on FSSSR Data.

Figure 12 The rate for retired HHs as a share of HHs with pension receiver



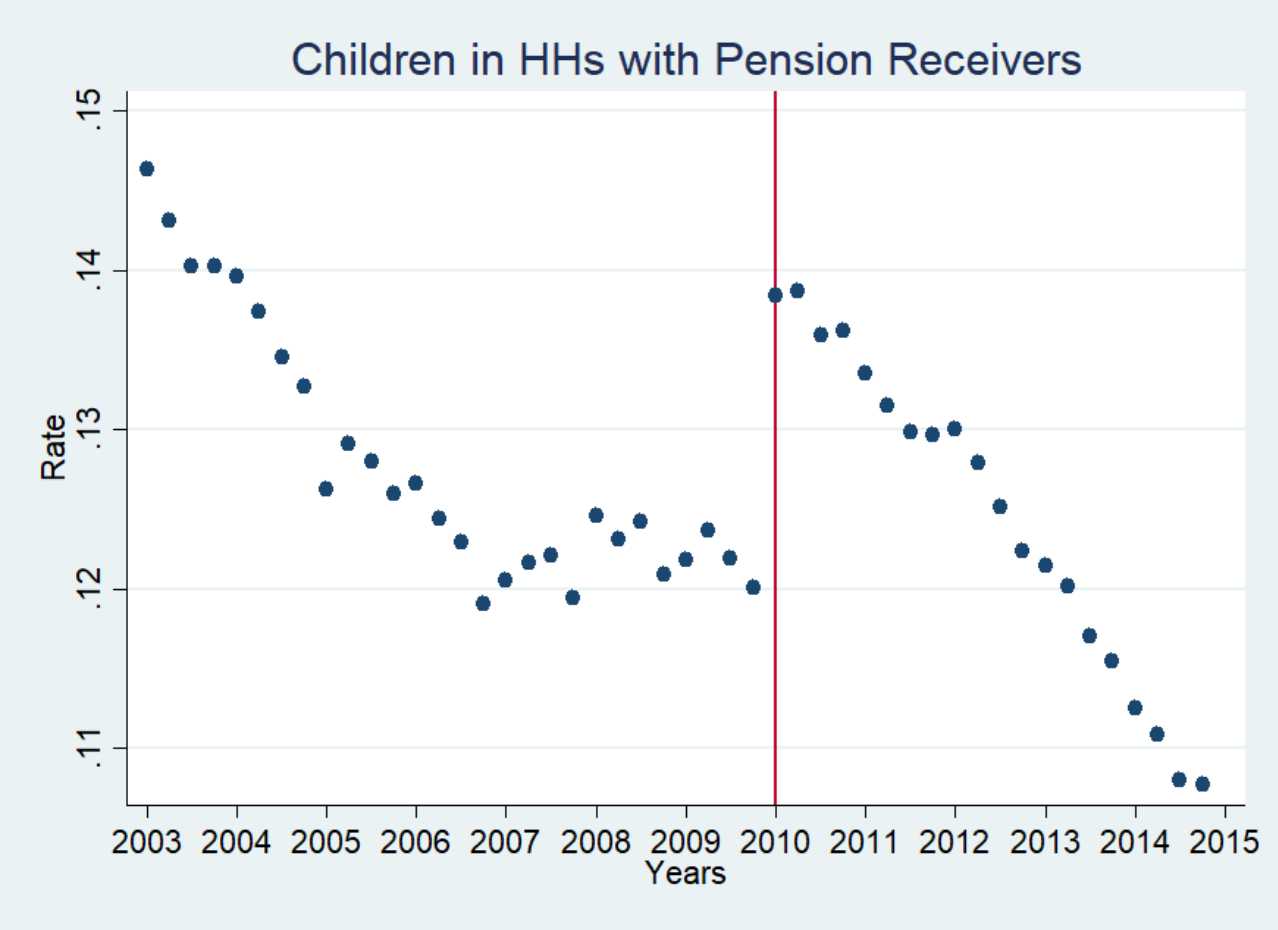
Note: The graph is based on FSSSR Data.

Figure 13 The rate for HHs with only pension receivers as a share of HHs with pensioners



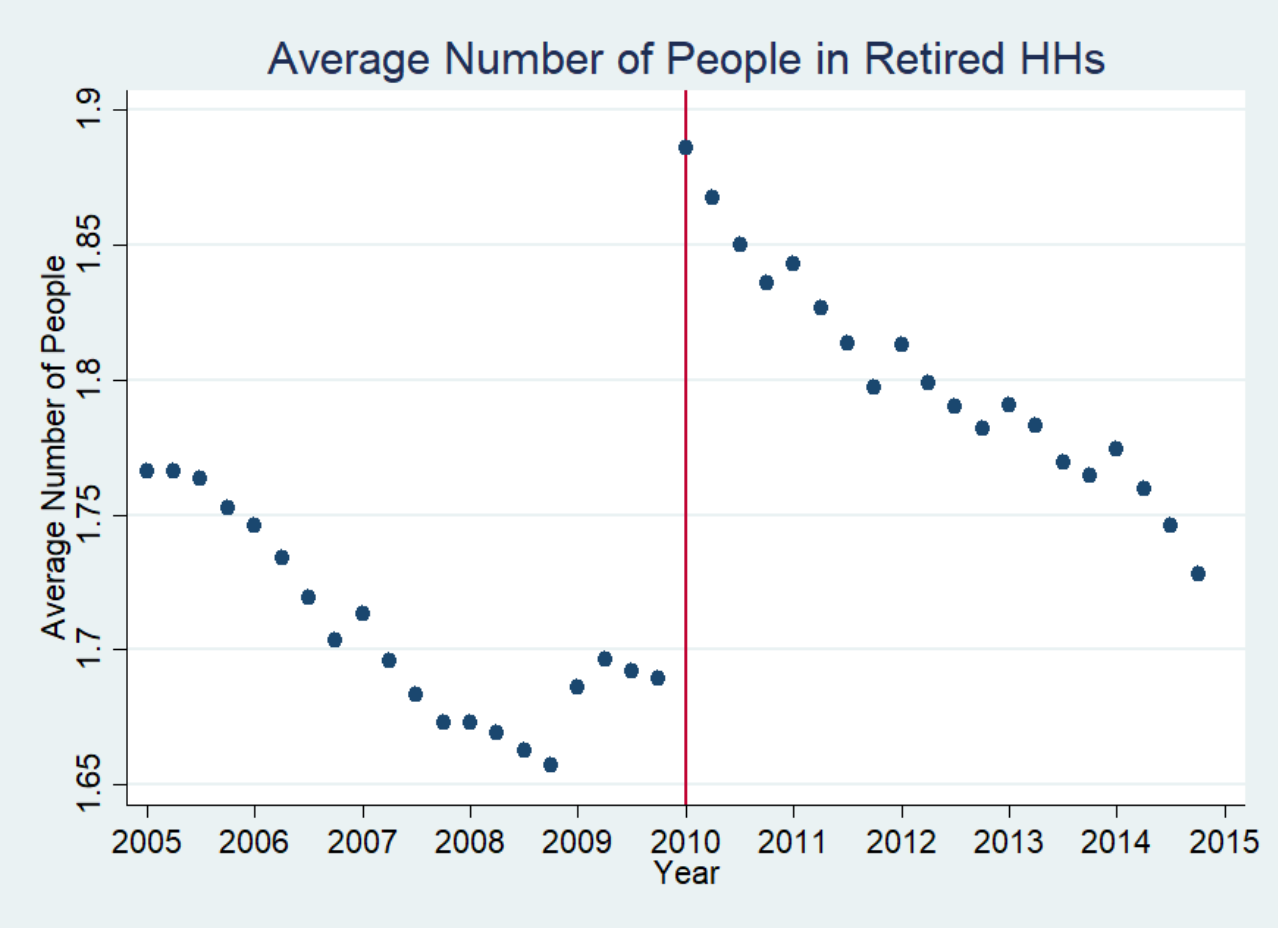
Note: The graph is based on FSSSR Data.

Figure 14 The rate for HHs with children and pension receivers as a share of HHs with pensioners



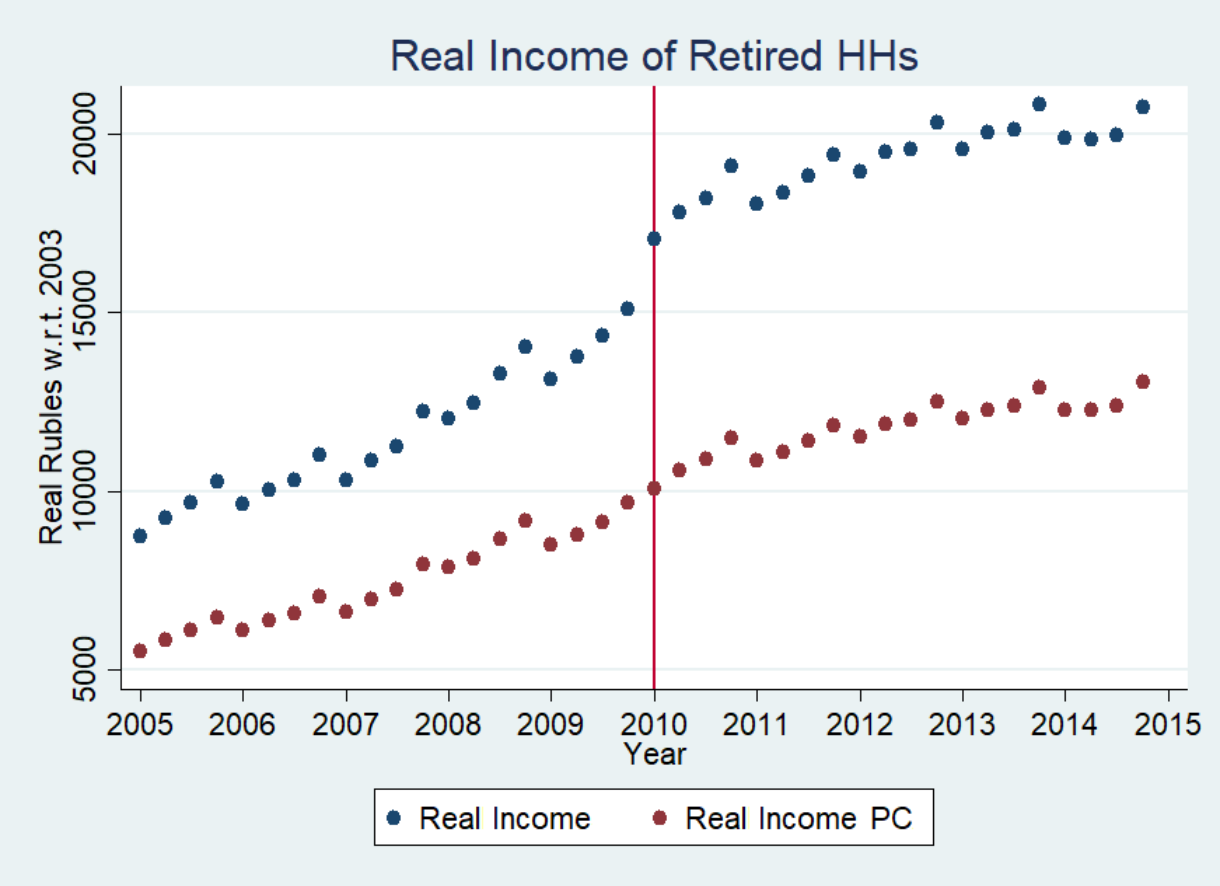
Note: The graph is based on FSSSR Data.

Figure 15 The average number of people in retired households



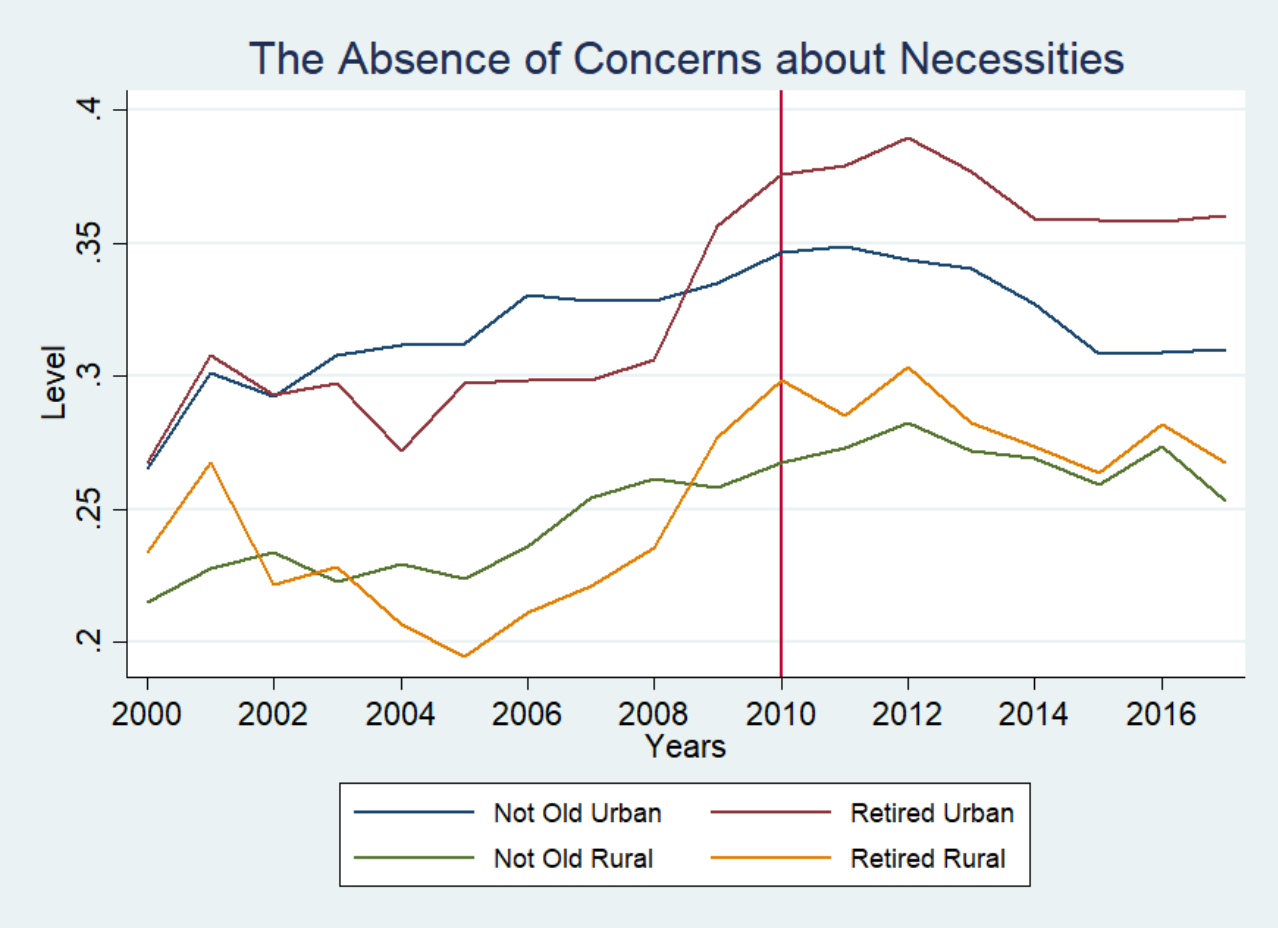
Note: The graph is based on FSSSR Data.

Figure 16 The real income of retired households



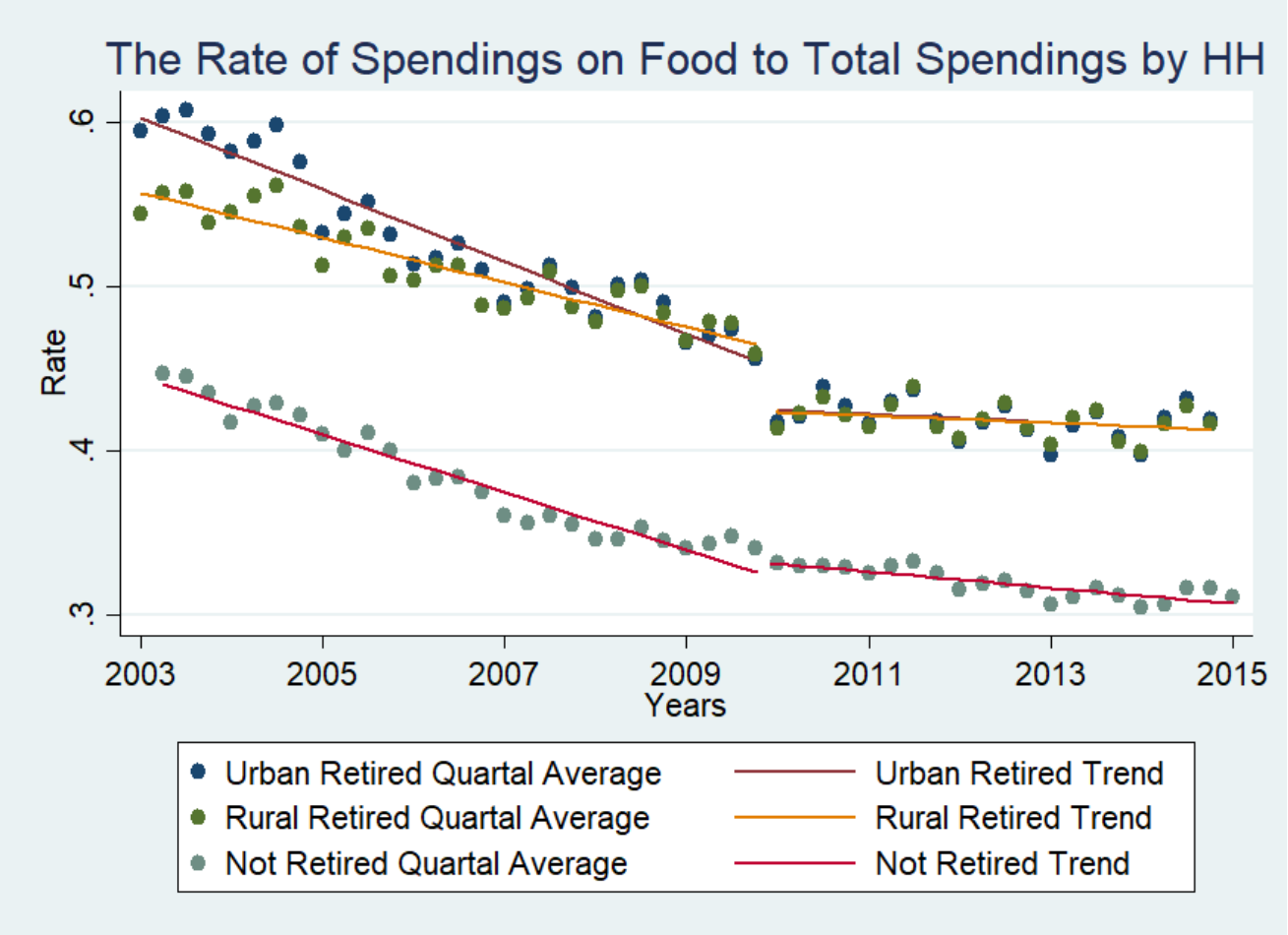
Note: The graph is based on FSSSR Data.

Figure 17 The absence of concerns about necessities



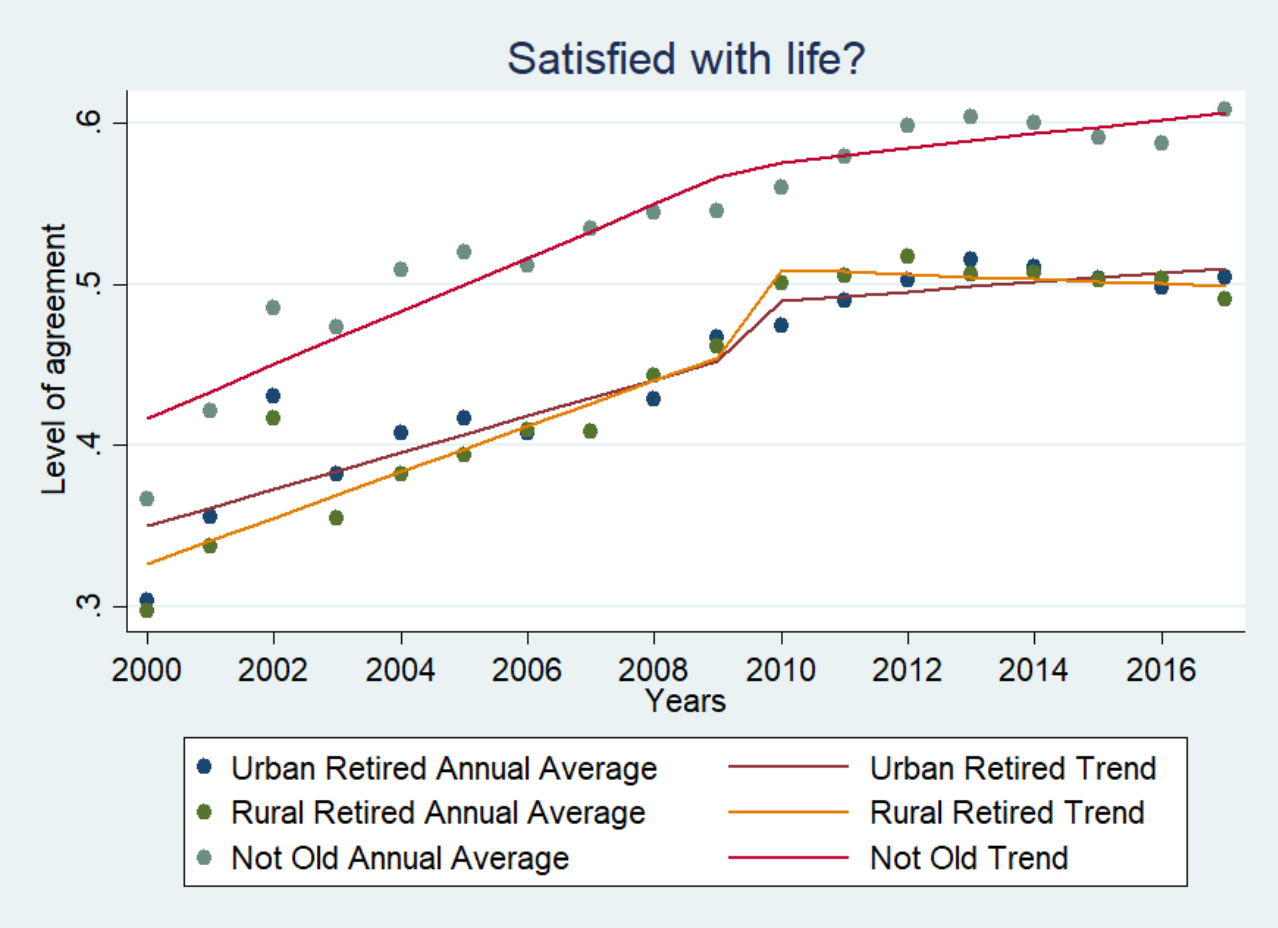
Note: The graph is based on RLMS Data.

Figure 18 The rate of spendings on food to total spendings by HHs



Note: The graph is based on FSSSR Data.

Figure 19 The life satisfaction



Note: The graph is based on RLMS Data.

Tables

Table 1

The discontinuity in the real income of retired individuals and households in 2010.

	RLMS Retired Ind.	HHBS Retired HH
VARIABLES	Log (Real Income)	Log (Real Income)
$I_{t>=2010}$	0.208***	0.197***
	(0.0133)	(0.0159)
Trend	0.0943***	0.103***
	(0.00207)	(0.00476)
Trend x $I_{t>2010}$	-0.0930***	-0.0714***
	(0.00314)	(0.00605)
Constant	6.804***	8.702***
	(0.0343)	(0.0149)
Quarter Fixed Effects	-	YES
Observations	52,189	633,894
R-squared	0.504	0.276

Robust standard errors in parentheses; *** p<0.01

Table 2 HHBS Data

Difference-in-differences estimation of pension increase effect on the employment of the respondents of working age.

	Respondents of Working Age
VARIABLES	Employed
$I_{RetireeInHH}$ x $I_{t>=2010}$	-0.0285***
	(0.00565)
$I_{RetireeInHH}$	-0.0544***
	(0.00519)
$I_{t>=2010}$	-0.0113***
	(0.00422)
Trend	0.00589***
	(0.00171)
Trend x $I_{t>2010}$	0.00337
	(0.00211)
Constant	0.771***
	(0.00615)
Quarter Fixed Effects	YES
Observations	3,860,070
R-squared	0.006

Robust standard errors in parentheses; *** p<0.01

Table 3 HHBS Data

Difference-in-differences estimation of the pension increase effect on the not employed respondents of working age desire not to look for a job.

	Not Employed Respondents of Working Age
VARIABLES	Does not Look for a Job
$I_{RetireeInHH}$ x $I_{t>=2010}$	0.0214***
	(0.00468)
$I_{RetireeInHH}$	0.0458***
	(0.00401)
$I_{t>=2010}$	0.000513
	(0.00340)
Trend	-0.00537***
	(0.00126)
Trend x $I_{t>2010}$	0.000525
	(0.00155)
Constant	0.193***
	(0.00445)
Quarter Fixed Effects	YES
Observations	3,860,070
R-squared	0.005

Robust standard errors in parentheses; *** p<0.01

Appendix A

Figure A1 The relative income of retired people

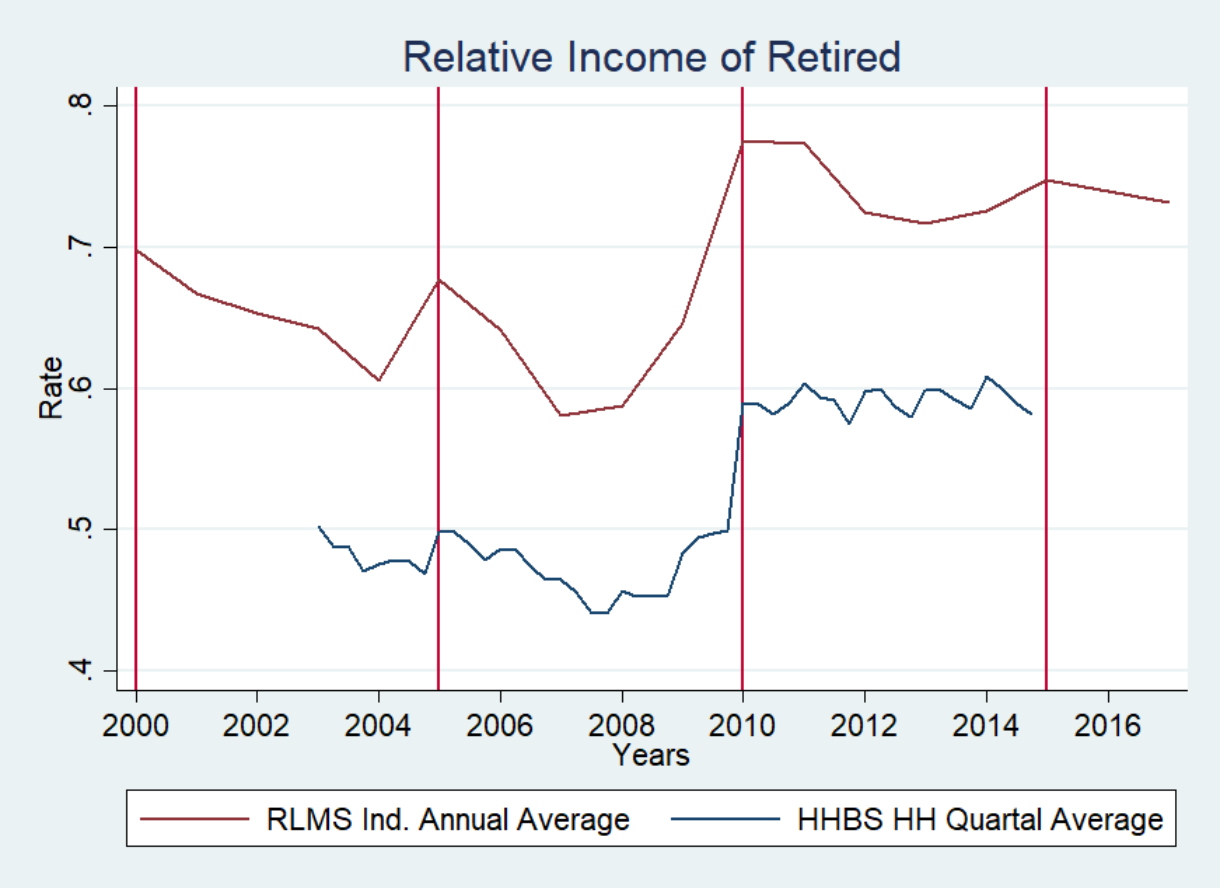
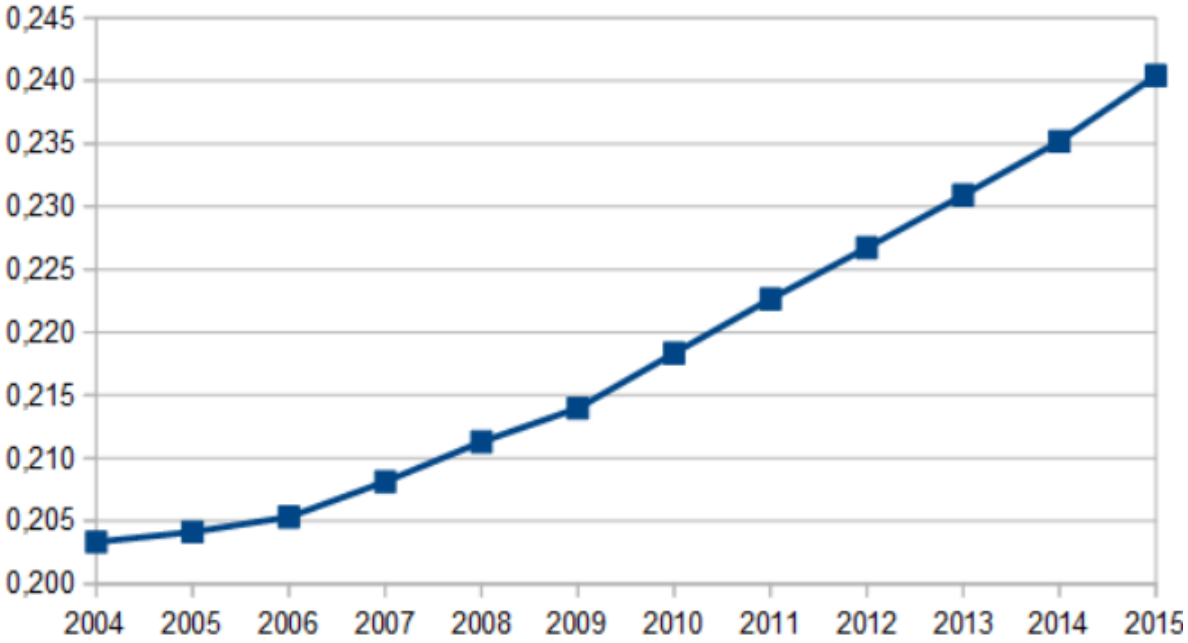
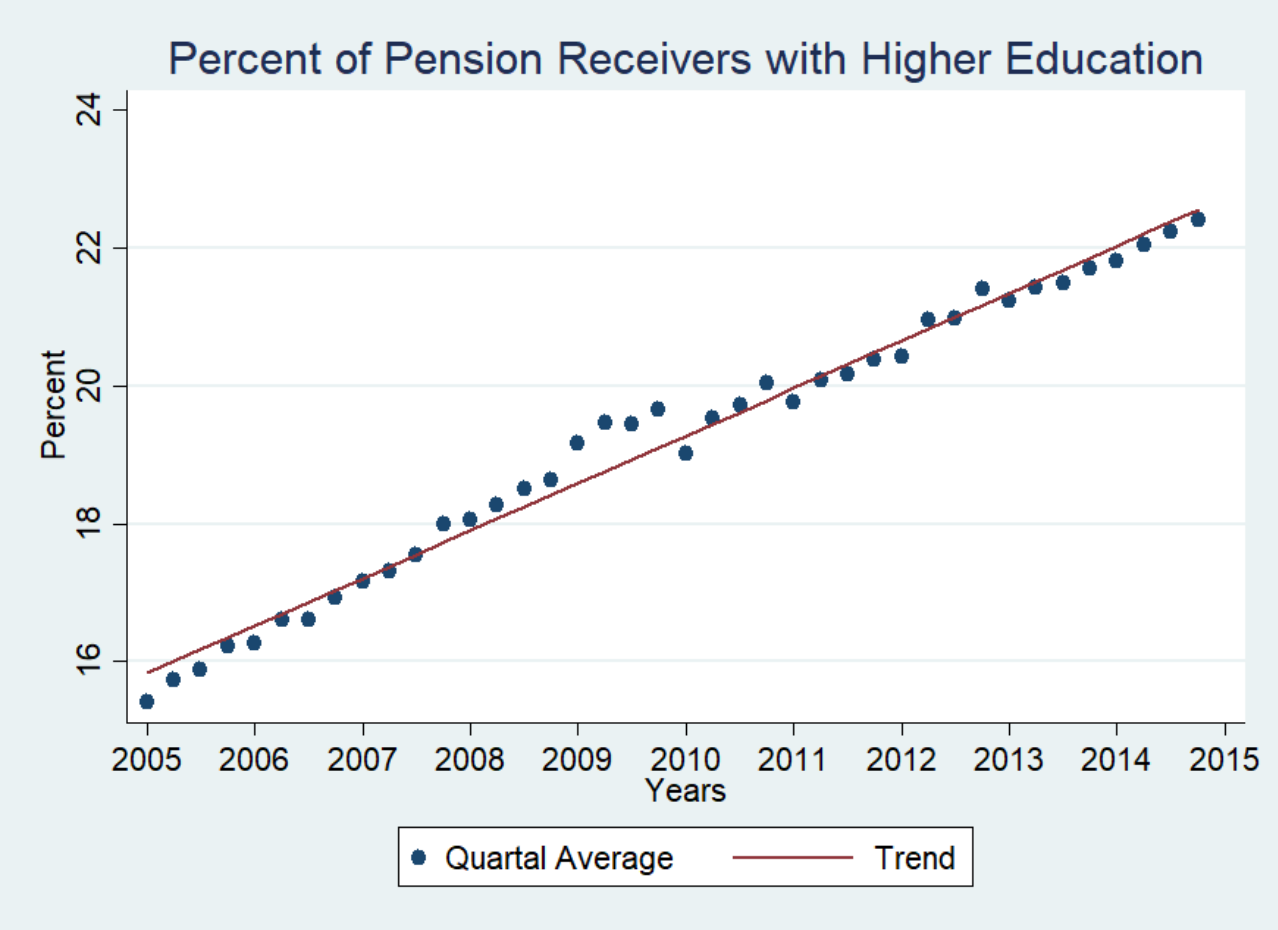


Figure A2 The rate for pensioners as a share of the population



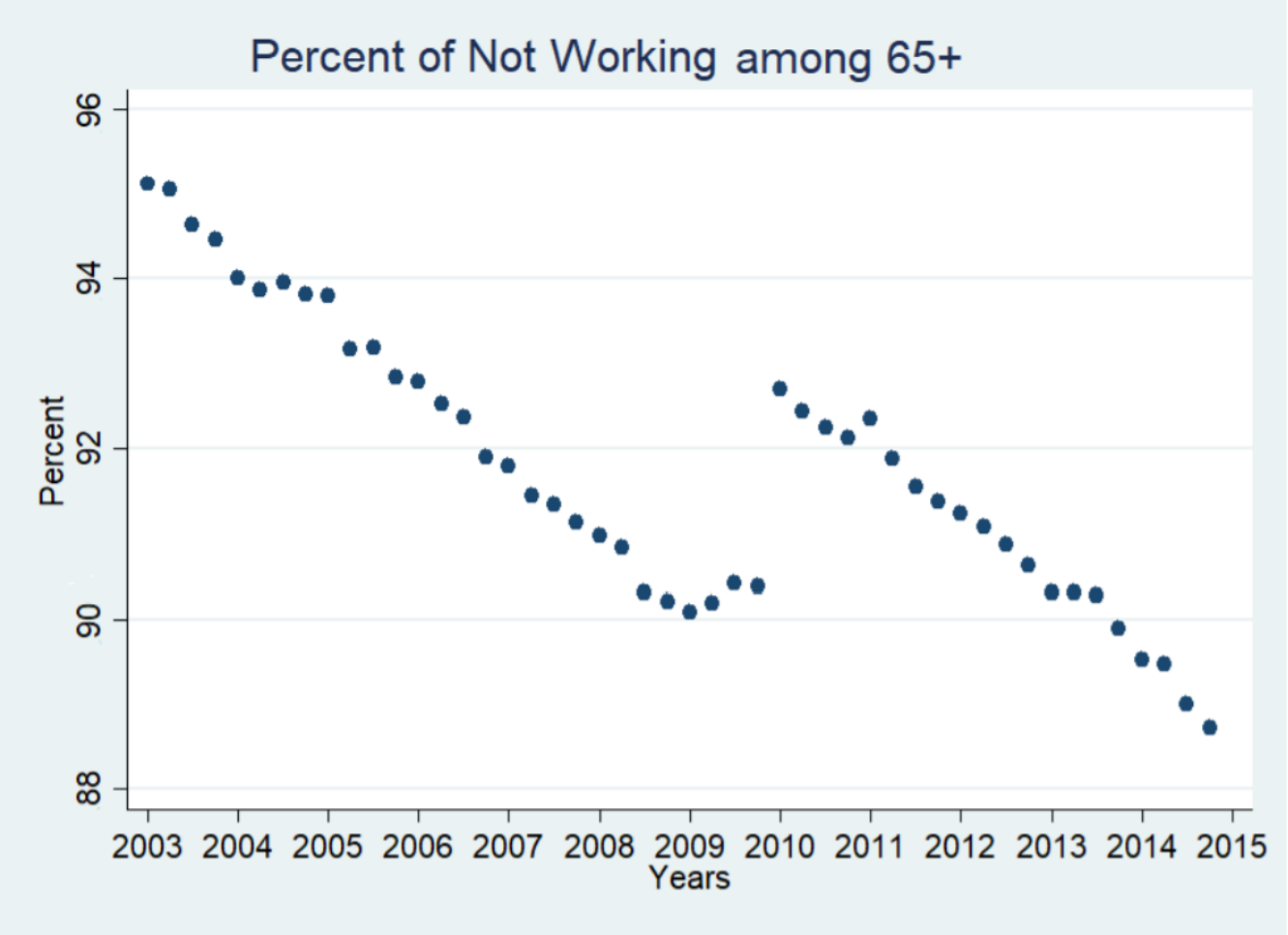
Note: The graph is based on FSSSR Data (see `http://cbsd.gks.ru/`).

Figure A3 The percentage of pension receivers with higher education



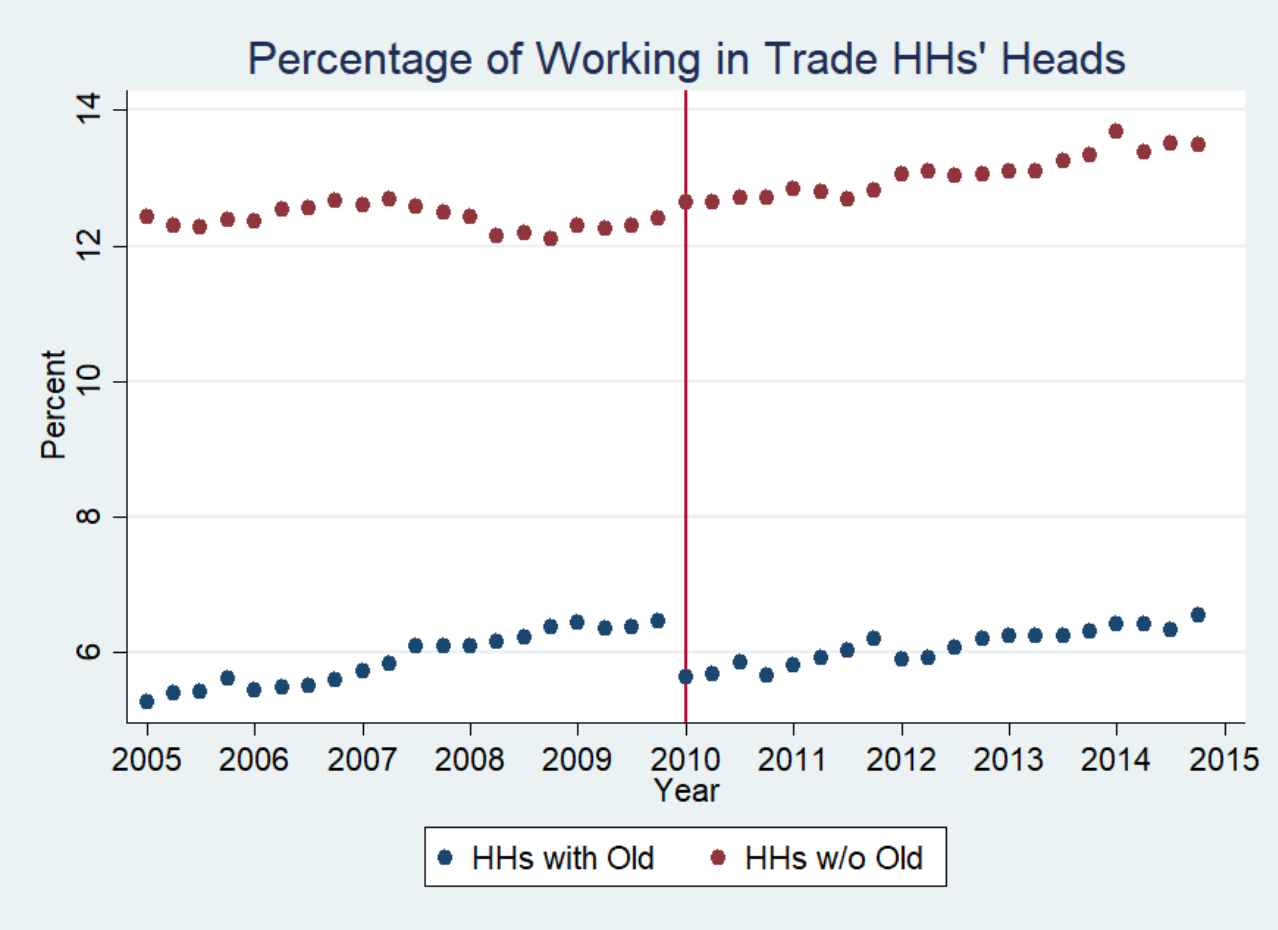
Note: The graph is based on FSSSR Data.

Figure A4 The percentage of not working among people older 65



Note: The graph is based on FSSSR Data.

Figure A5 The employment of Households' Heads in Wholesales and Retail Sales



Note: The graph is based on FSSSR Data.

Table A1

The impact of WW2 Victory's anniversaries on the relative income of the retired individuals and households.

VARIABLES	RLMS Retired Ind. Relative Income	HHBS Retired HH Relative Income
Anniversary	0.0648***	0.0380***
	(0.00422)	(0.00497)
One Year Around Anniversary	0.0236***	0.00707***
	(0.00407)	(0.00176)
Trend	0.00773***	0.0143***
	(0.00120)	(0.000118)
Constant	0.600***	0.443***
	(0.0217)	(0.00710)
Quarter Fixed Effects	-	YES
Observations	52,319	633,894
R-squared	0.010	0.017

Robust standard errors in parentheses; *** p<0.01

Table A2 HHBS Data 2003-2015

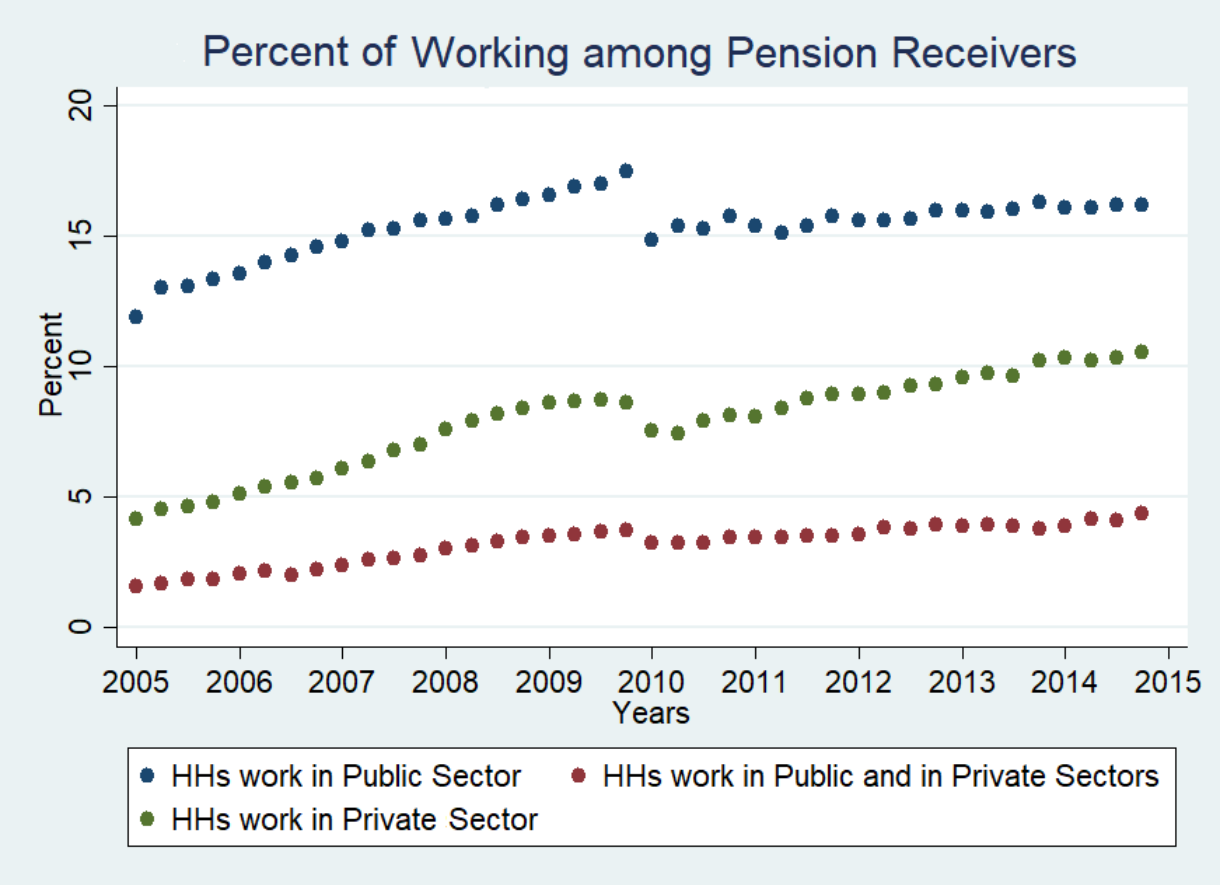
Robustness check of the difference-in-differences estimation of the pension increase effect on the respondents of working age desire not to look for a job.

	Respondents of Working Age
VARIABLES	Does not Look for a Job
$I_{RetireeInHH}$ x $I_{t>=2010}$	0.0169***
	(0.00515)
$I_{RetireeInHH}$	0.0447***
	(0.00398)
$I_{t>=2010}$	0.00315
	(0.00257)
Trend	-0.00535***
	(0.00162)
Trend x $I_{t>2010}$	0.00161
	(0.00196)
$I_{RetireeInHH}$ x $I_{t>=2011}$	-0.00225
	(0.00327)
$I_{RetireeInHH}$ x $I_{t>=2009}$	0.00737
	(0.00471)
$I_{t>=2009}$	-0.00147
	(0.00214)
$I_{t>=2011}$	-0.00511
	(0.00221)
Constant	0.182***
	(0.00535)
Quarter Fixed Effects	YES
Observations	3,860,070
R-squared	0.005

Robust standard errors in parentheses; *** p<0.01

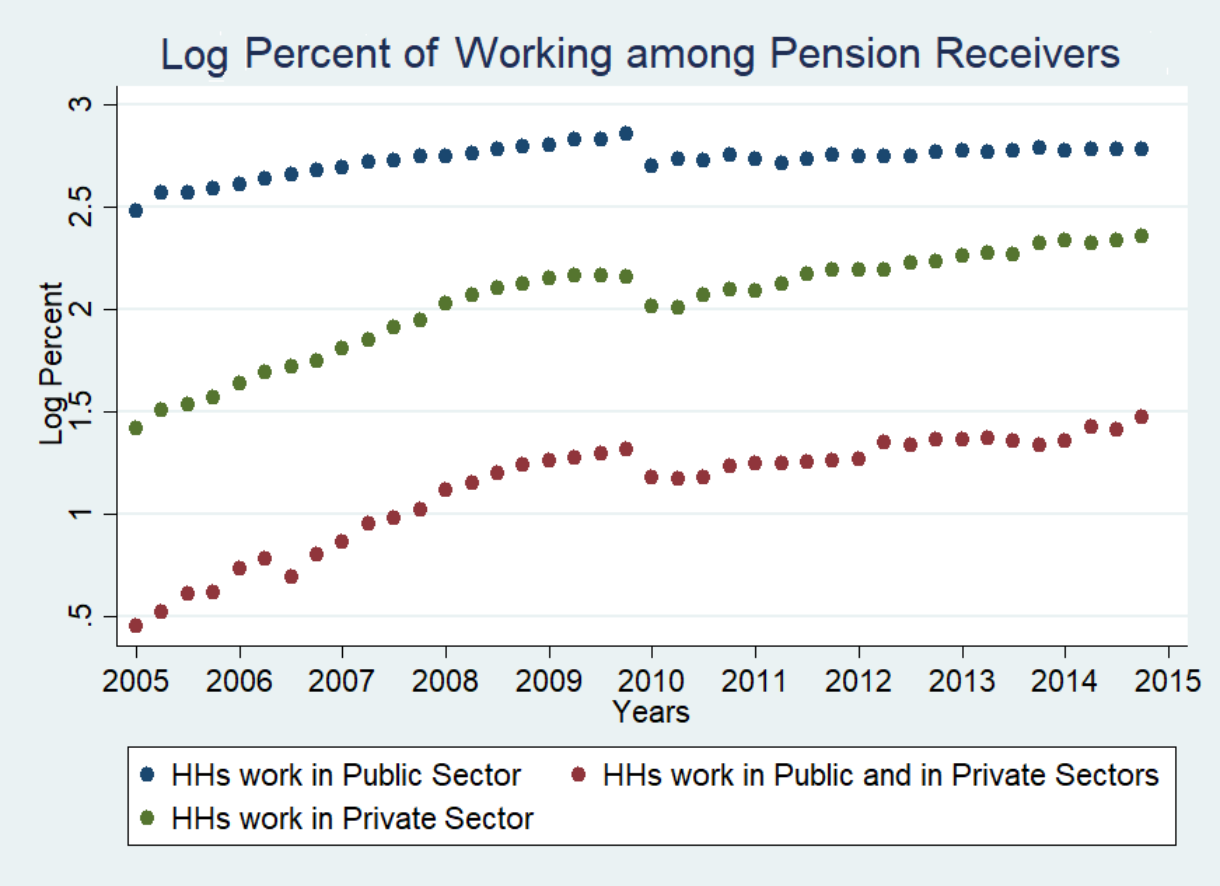
Appendix B

Figure B1 The percentages of working pension receivers in the households with a head and/or the spouse of a head working in different sectors



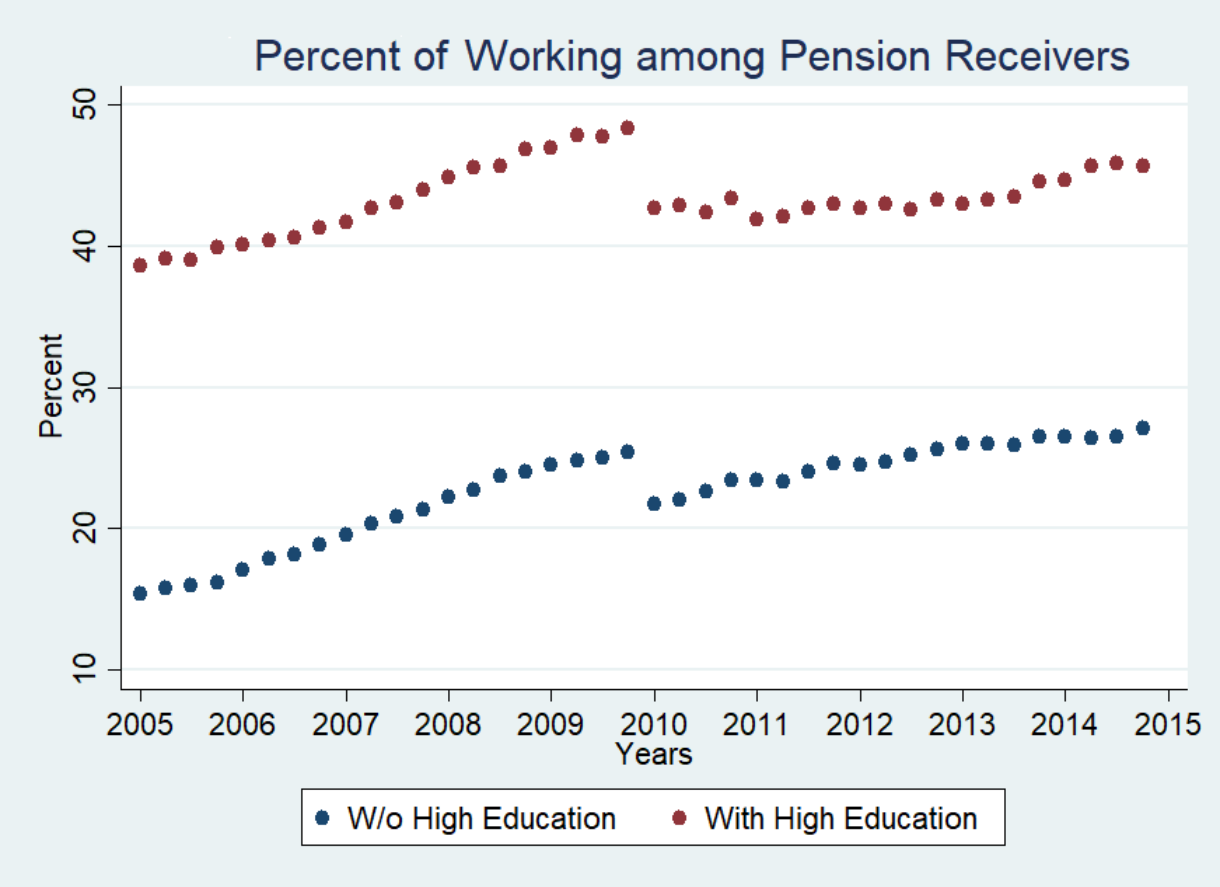
Note: The graph is based on FSSSR Data. The figure shows the ratio of the number of employed retirees in a certain type of households to all retirees.

Figure B2 The log percentages of working pension receivers in the households with a head and/or the spouse of a head working in different sectors



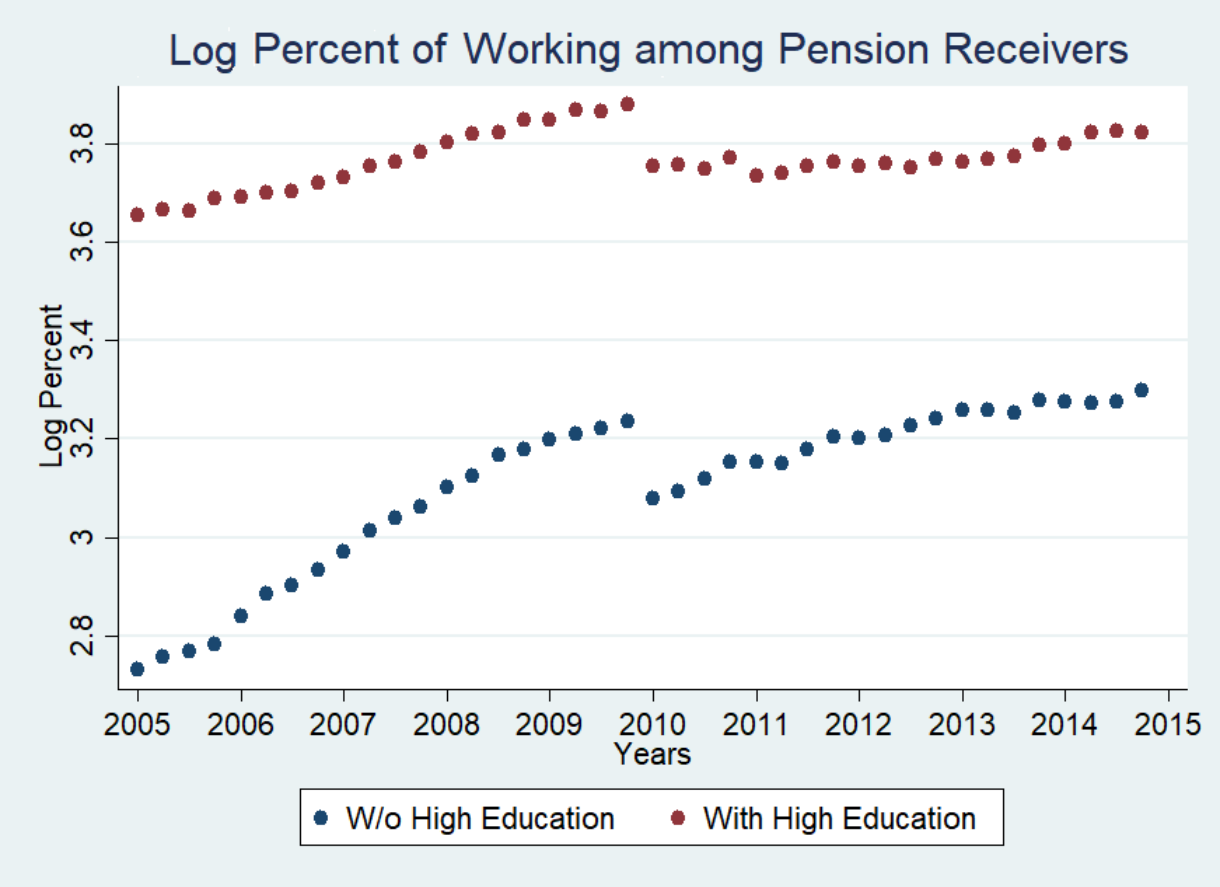
Note: The graph is based on FSSSR Data. The figure shows the ratio of the number of employed retirees in a certain type of households to all retirees.

Figure B3 The percentages of working pension receivers with different levels of education



Note: The graph is based on FSSSR Data.

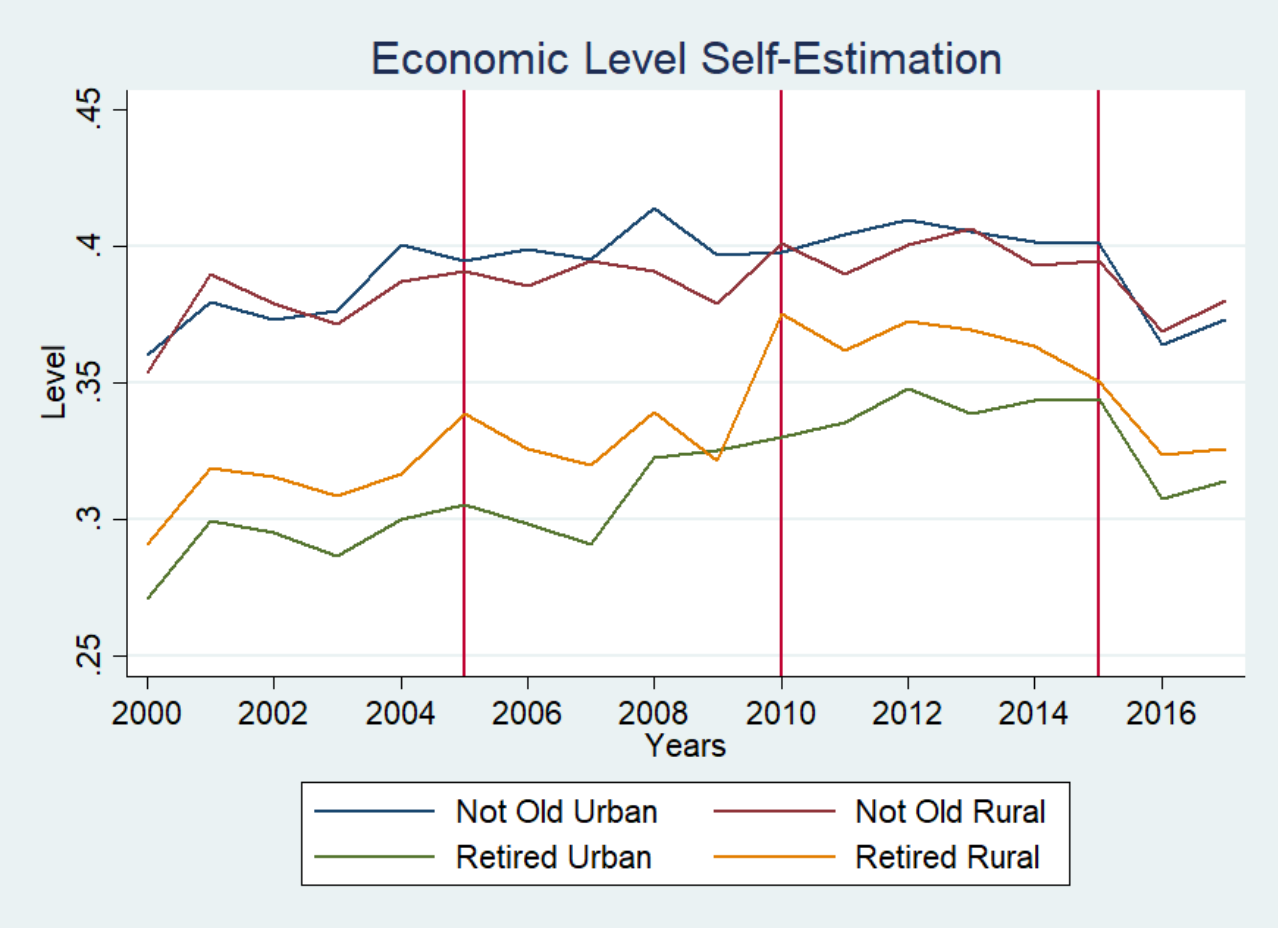
Figure B4 The log percentages of working pension receivers with different levels of education

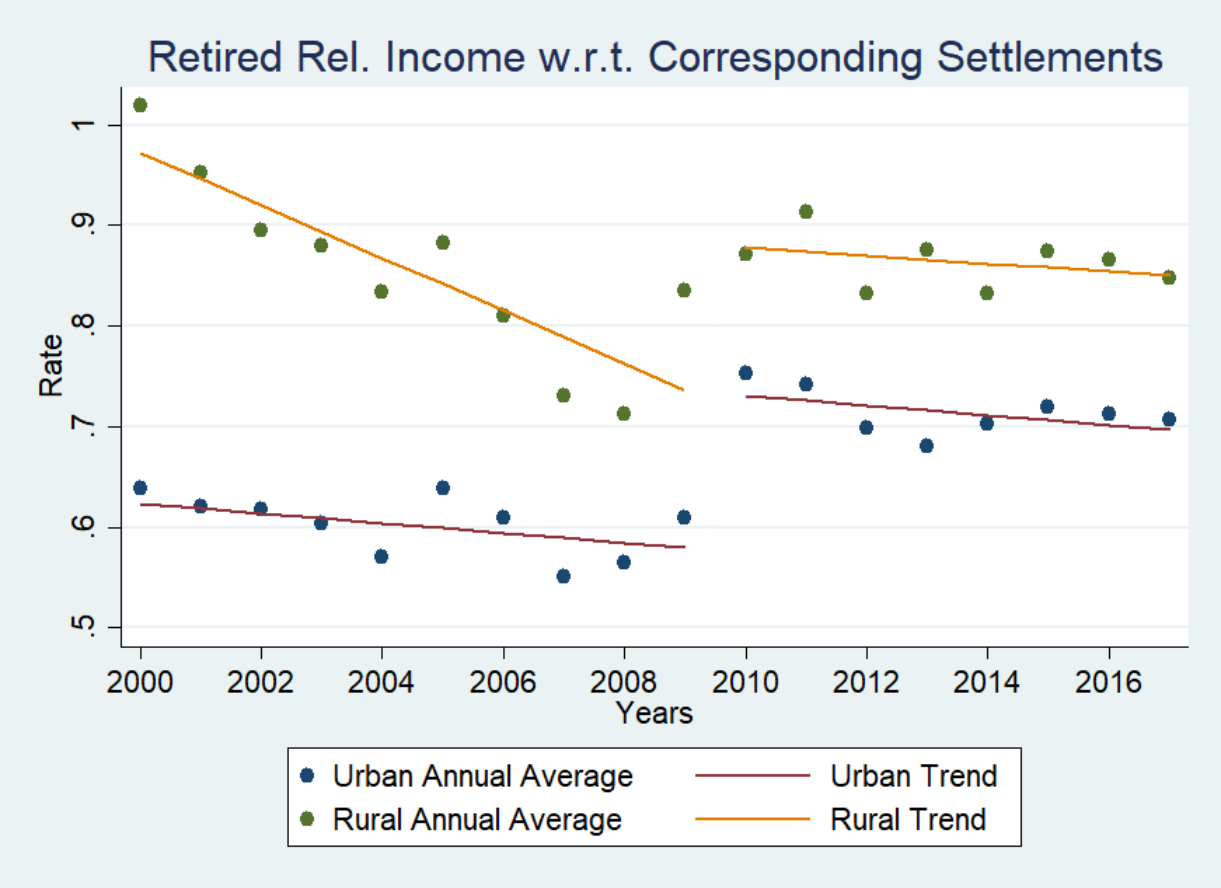


Note: The graph is based on FSSSR Data.

Appendix C

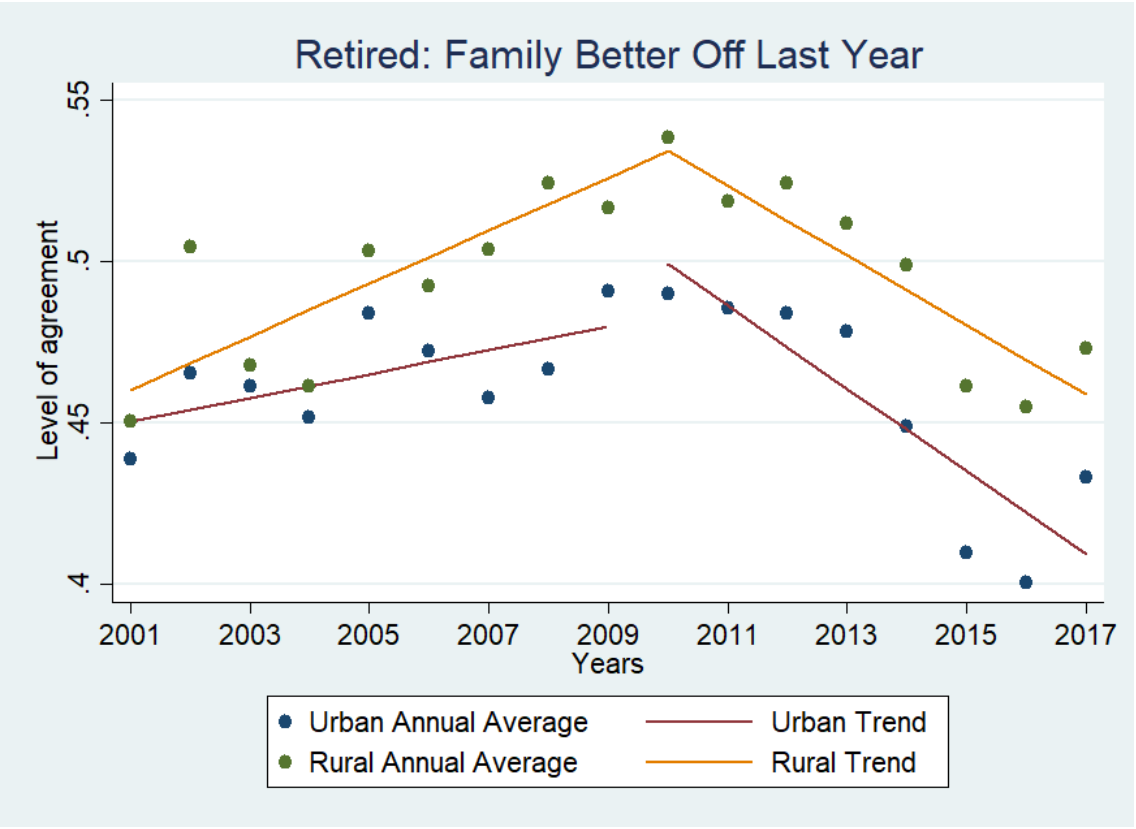
Graphs in this section are based on RLMS. Looking at the graph of self-estimated economic level, it is noticeable that the retired people estimated their economic level in 2010-2015 higher than in 2005-2010, while it is not true for younger people. So the retired persons noticed the changes in their relative income. Besides, rural retired dwellers tended to estimate their economic level higher than urban retired residents. Then the possible conclusion is that these two groups of the retired individuals compare themselves with different groups.

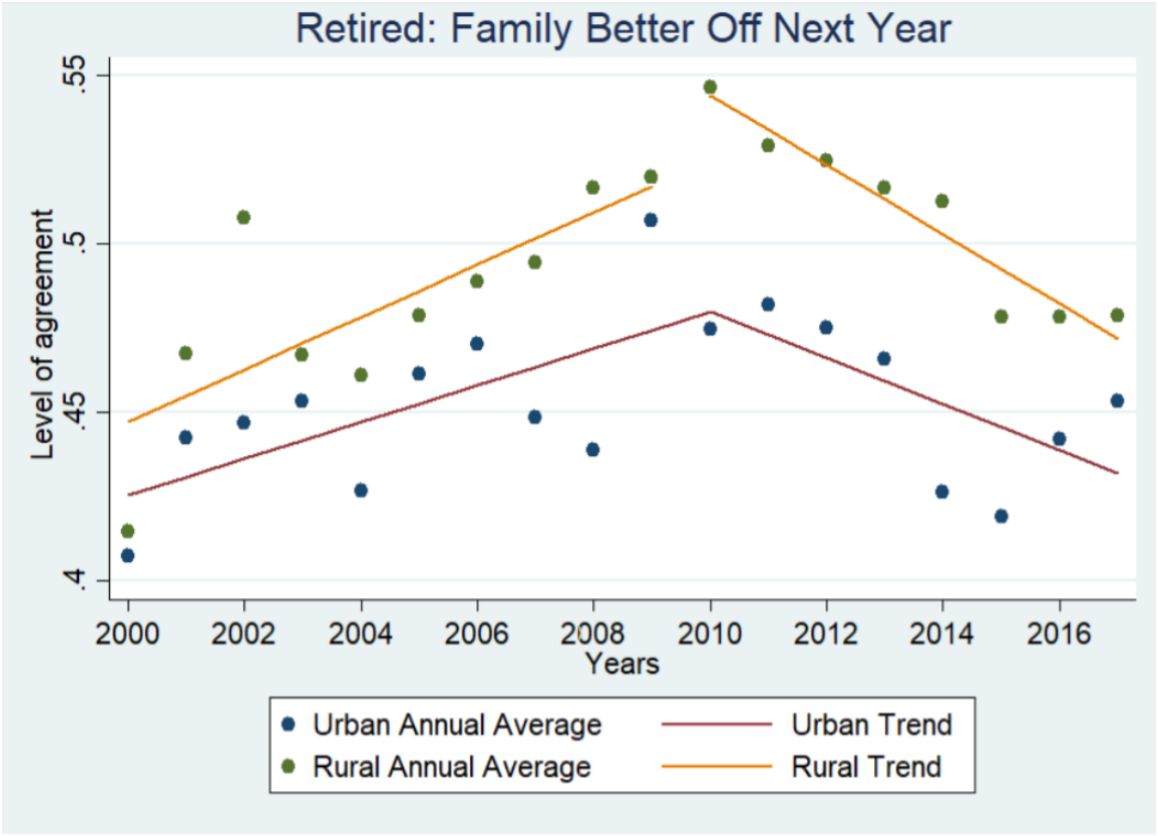




Analyzing the income of the retired people relative to the income of people in their type of settlements (urban, rural), it is apparent that these individuals mostly compare their income with that of people living in similar settlements.

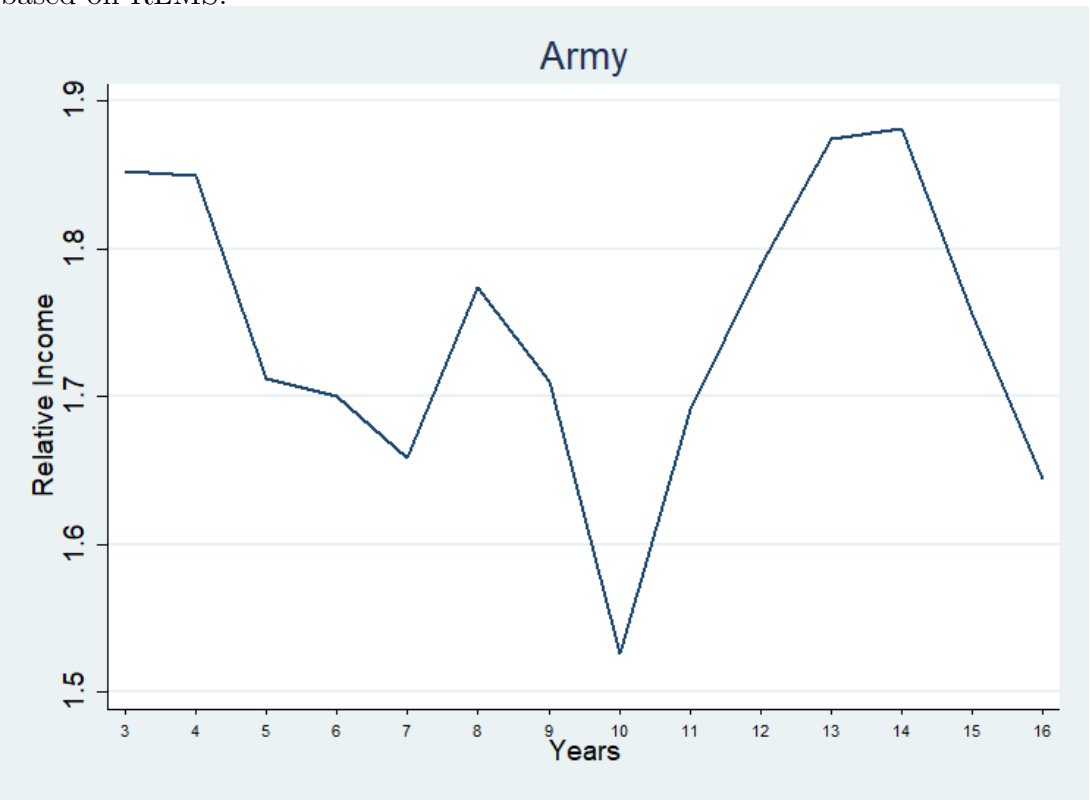
In addition to the noticing changes in relative income, the retired people feel changes in real income. This can be seen from the changes in trends of their answers to the questions: "Family better-off last year?"; "Family better-off next year?"

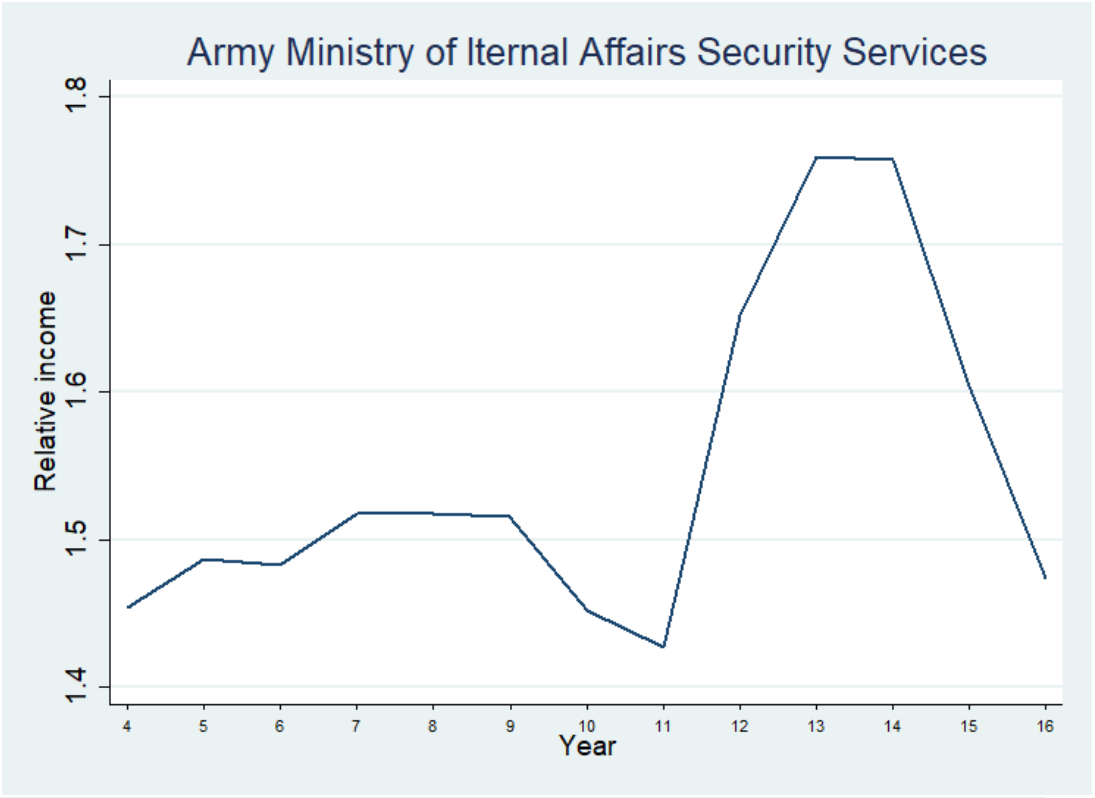

Retired: Family Better Off Last Year
Level of agreement
.4
.45
.5
.55
2001
2003
2005
2007
2009
2011
2013
2015
2017
Years
Urban Annual Average
Rural Annual Average
Urban Trend
Rural Trend

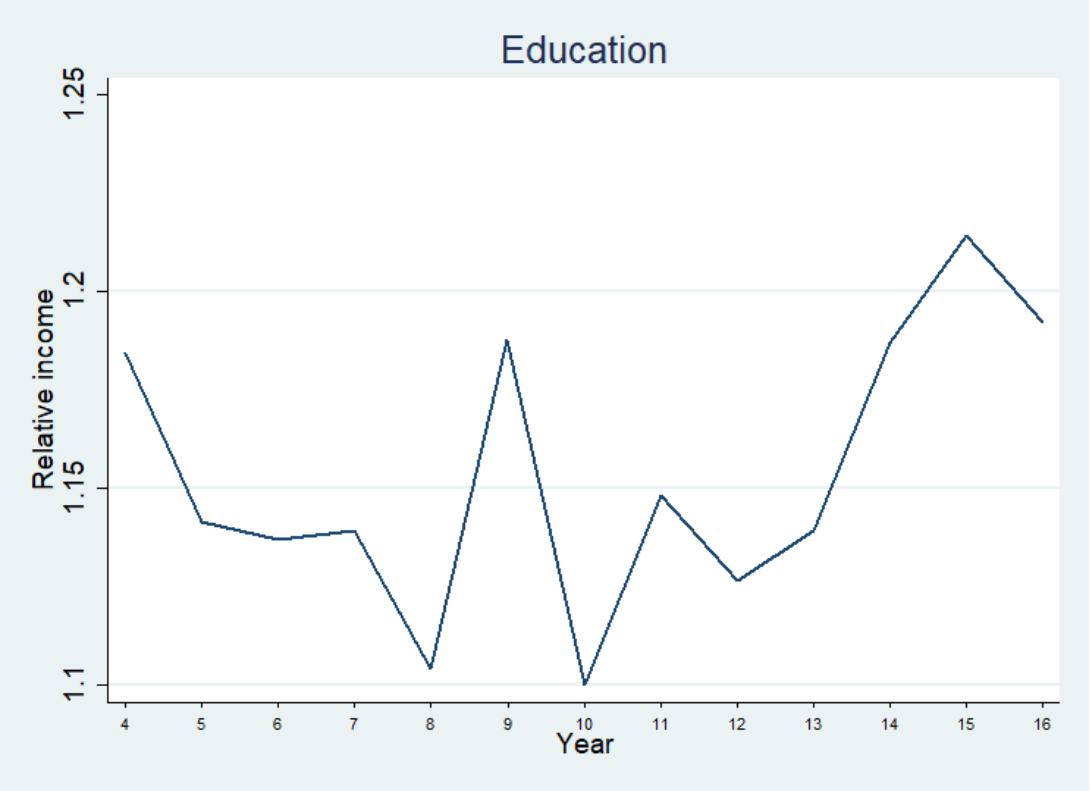

Retired: Family Better Off Next Year
Level of agreement
.4
.45
.5
.55
2000
2002
2004
2006
2008
2010
2012
2014
2016
Years
Urban Annual Average
Rural Annual Average
Urban Trend
Rural Trend

Appendix D

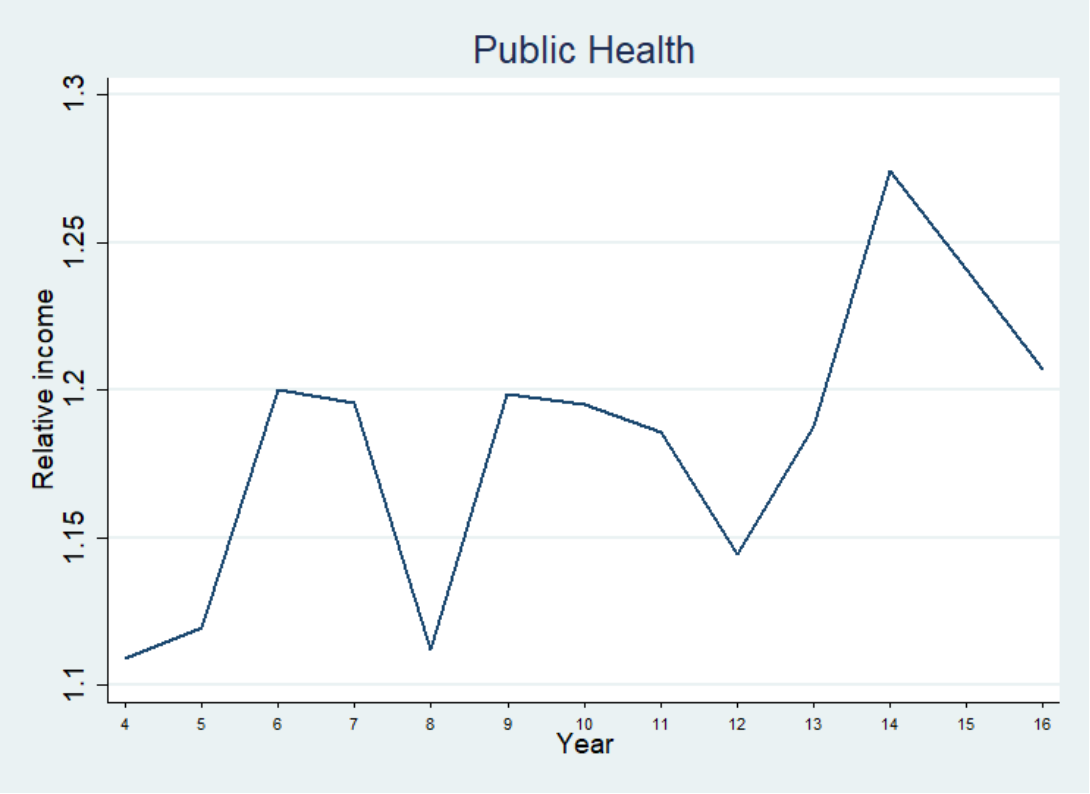
Graphs below show the relative income of individuals having jobs in the army, army/police/security, education, military industrial complex, public health, or science and culture for the time period between 2004-2016 (for the army — 2003-2016). The relative income of these people does not follow the cycles of World War II Victory anniversaries. The graphs are based on RLMS.

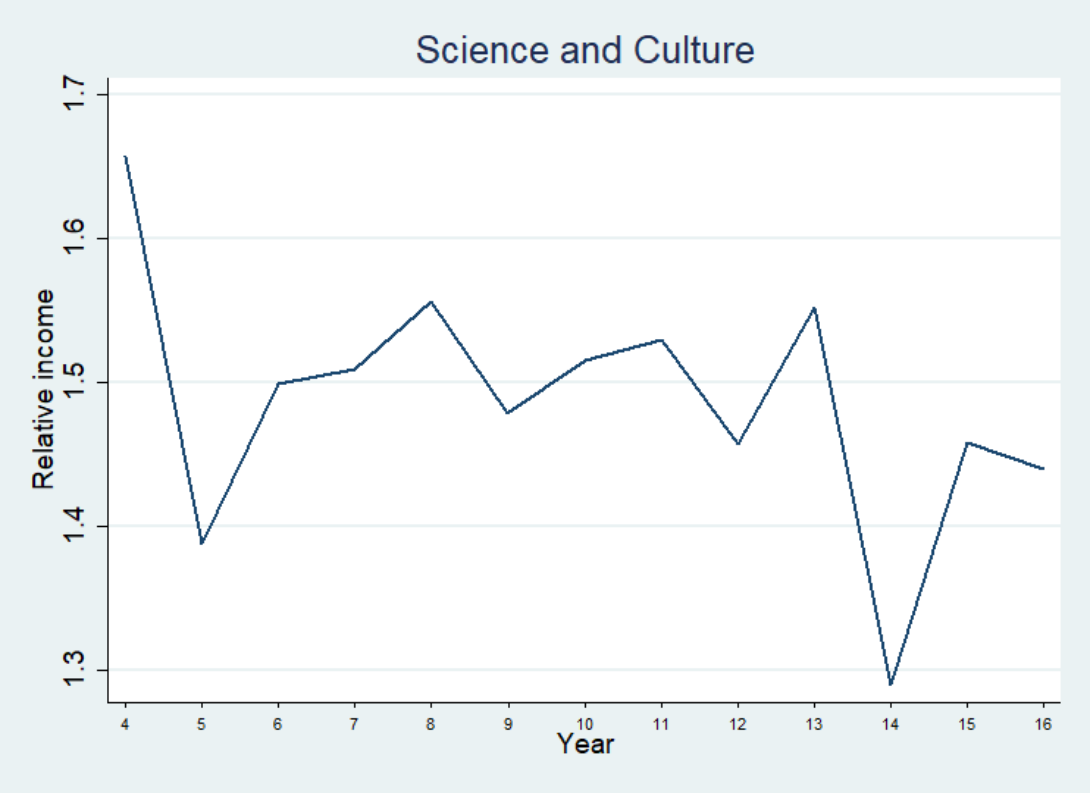



Army Ministry of Iternal Affairs Security Services
Relative income
1.4
1.5
1.6
1.7
1.8
4
5
6
7
8
9
10
11
12
13
14
15
16
Year

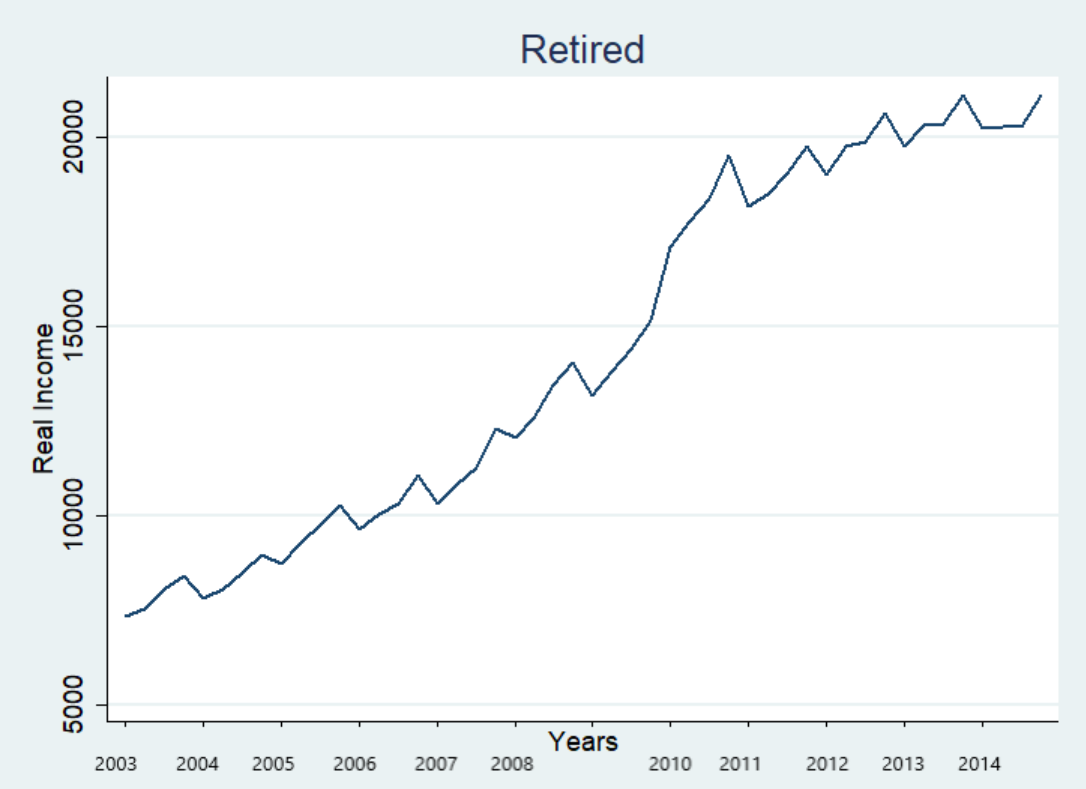

Education
Relative income
1.1
1.15
1.2
1.25
4
5
6
7
8
9
10
11
12
13
14
15
16
Year

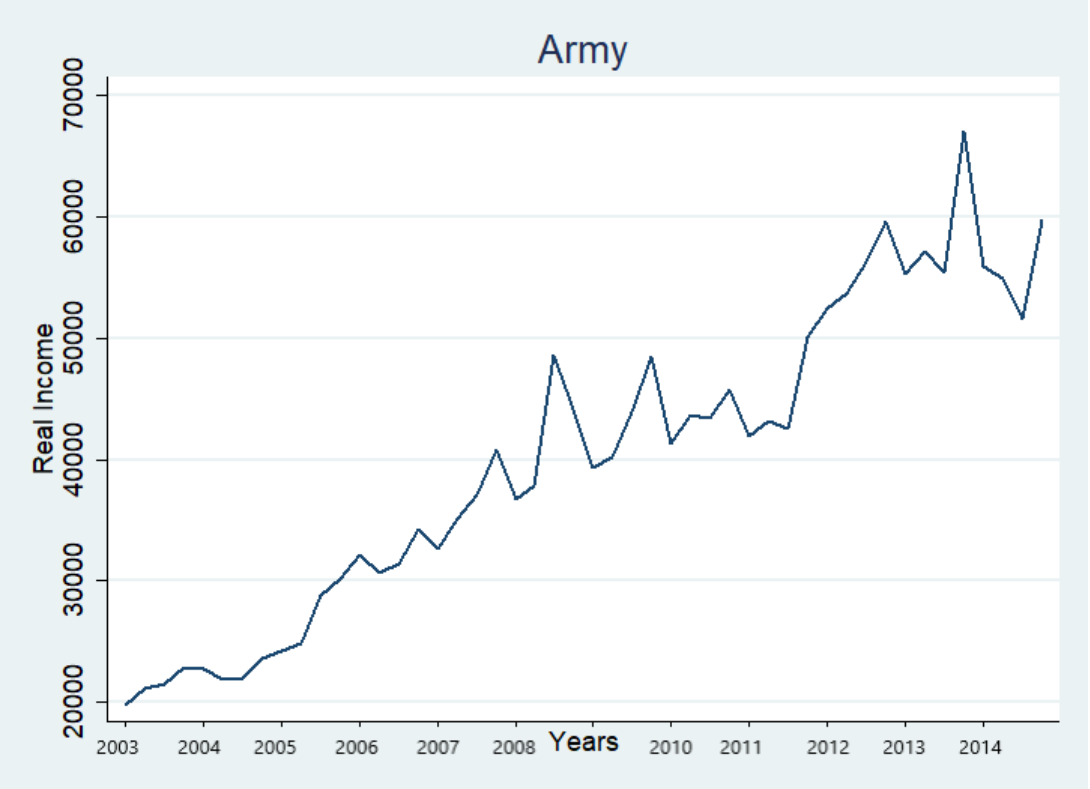

Military Industrial Complex
Relative income
1.2
1.3
1.4
1.5
1.6
4
5
6
7
8
9
10
11
12
13
14
15
16
Year

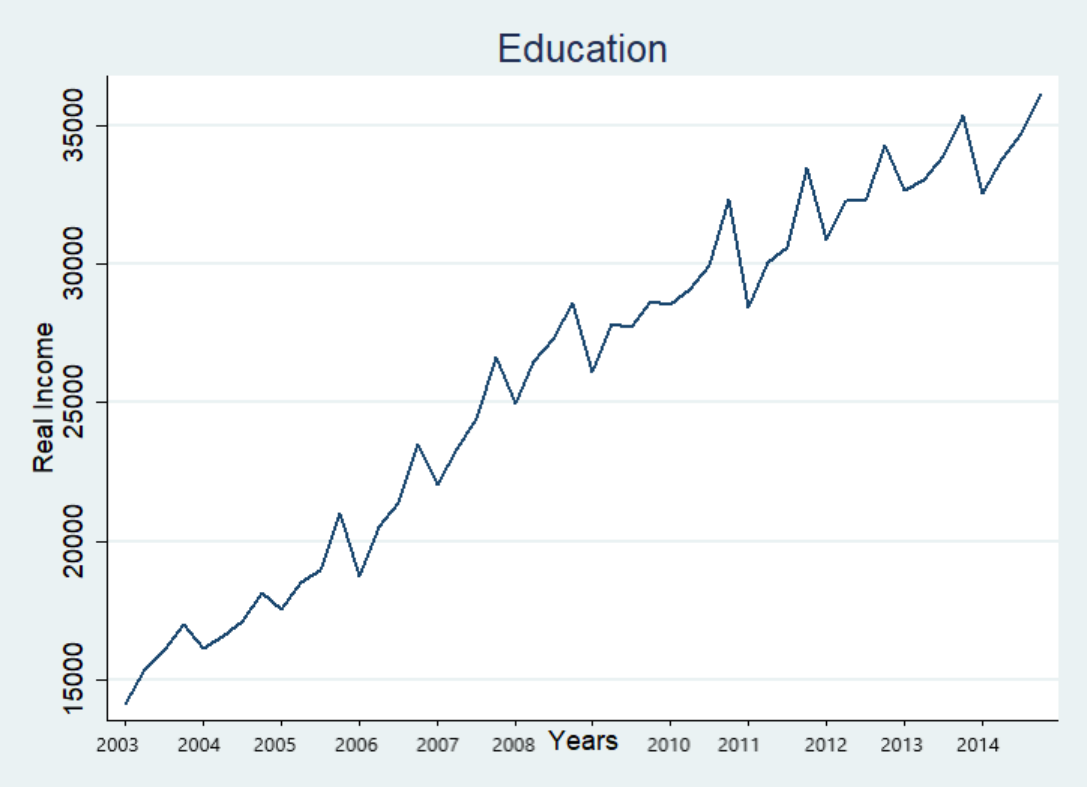

Public Health
Relative income
1.1
1.15
1.2
1.25
1.3
4
5
6
7
8
9
10
11
12
13
14
15
16
Year

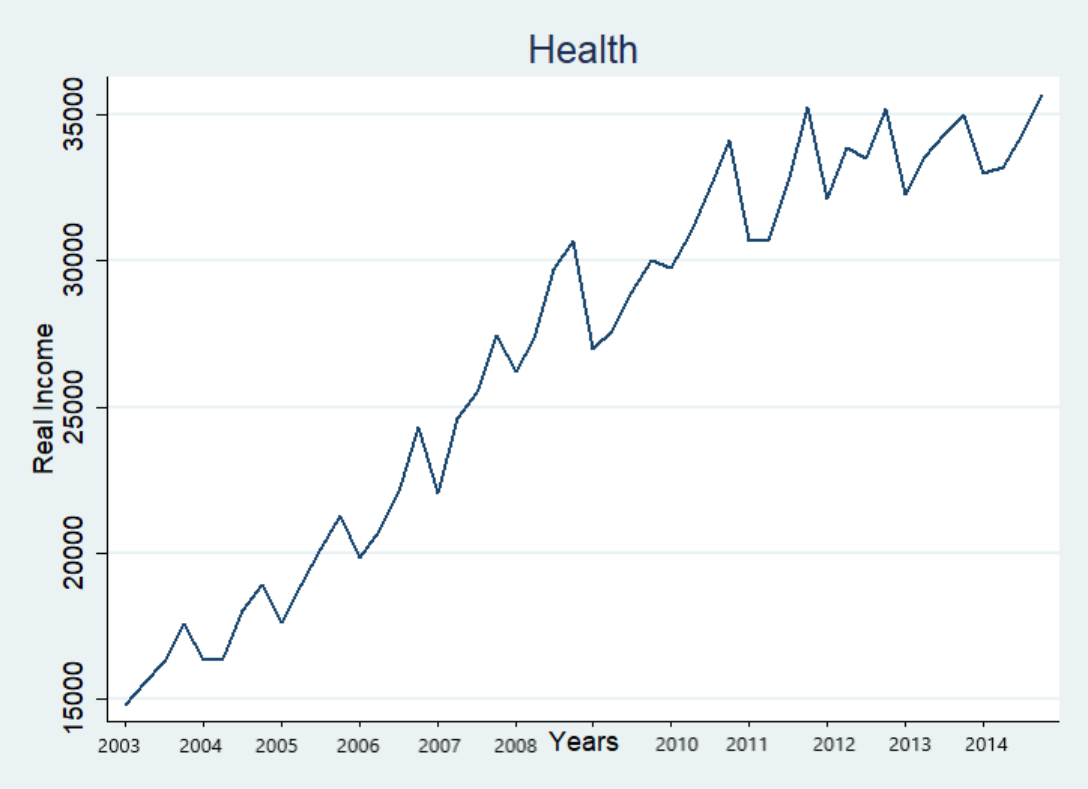

Science and Culture
Relative income
1.3
1.4
1.5
1.6
1.7
4
5
6
7
8
9
10
11
12
13
14
15
16
Year

The graphs below show the real income of the households with the heads serving in the military, working in education, in health care, or the real income of the retired households. The year 2003 is used as a base year for calculating the real income. The real income of the retired households rises throughout 2009-2011; in 2010, it is significantly above 2009. The real income of other types of households does not have this pattern. Graphs are based on HHBS.




Army
Real Income
20000
30000
40000
50000
60000
70000
2003
2004
2005
2006
2007
2008
Years
2010
2011
2012
2013
2014


Education
Real Income
15000
20000
25000
30000
35000
2003
2004
2005
2006
2007
2008
Years
2010
2011
2012
2013
2014


Health
Real Income
15000
20000
25000
30000
35000
2003
2004
2005
2006
2007
2008
Years
2010
2011
2012
2013
2014