

# The Retirement Consumption Smoothing in Russia

[Anton Nivorozhkin](#)

Ludmila Nivorozhkina

Kamila Abazieva

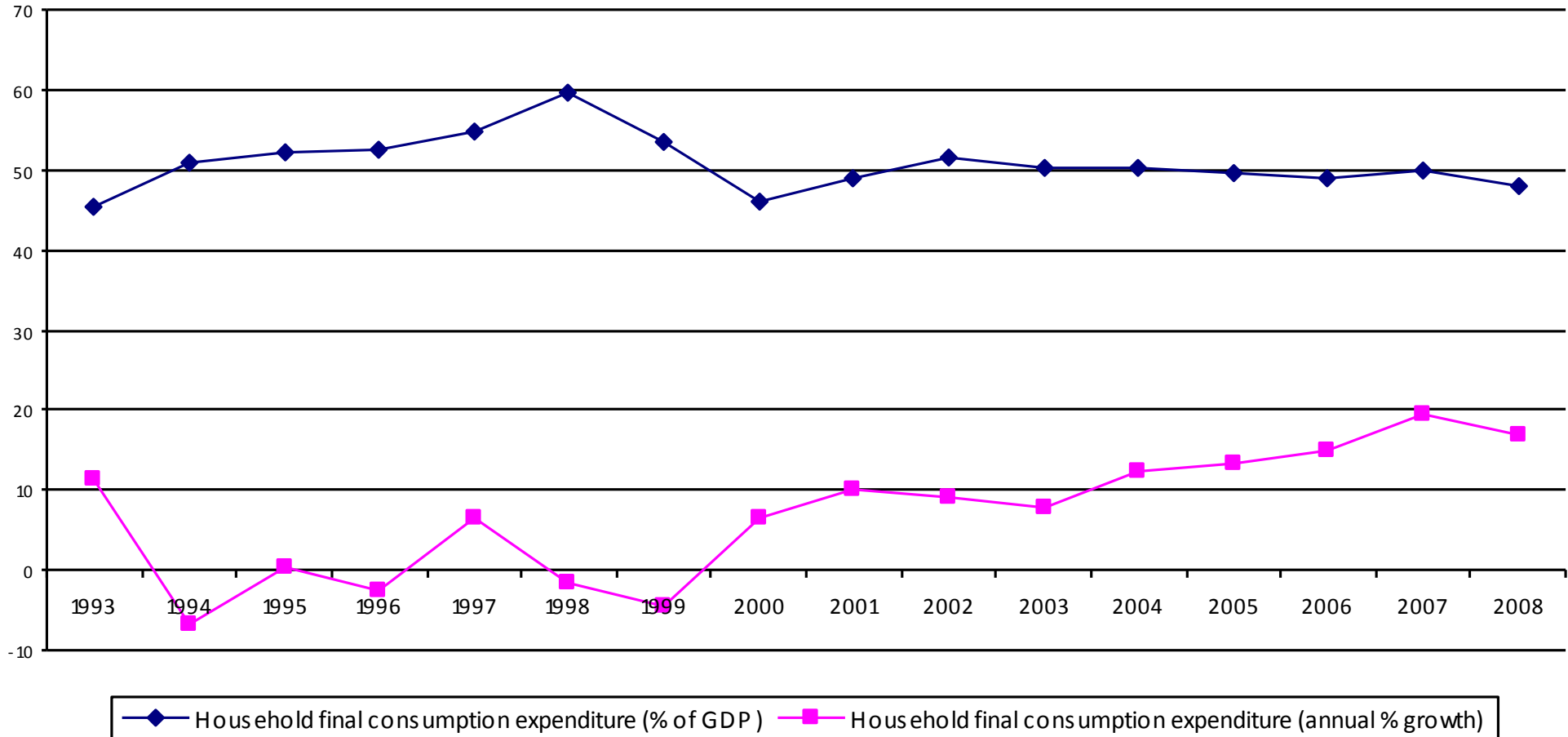
**IZA/Higher School of Economics Workshop: Labor Market Adjustment in the  
Commonwealth of Independent States, Central Asia and China in the Wake of the  
Great Recession**

**2012/10/05 - 2012/10/06**

**Moscow, Russia**

# 1 Motivation

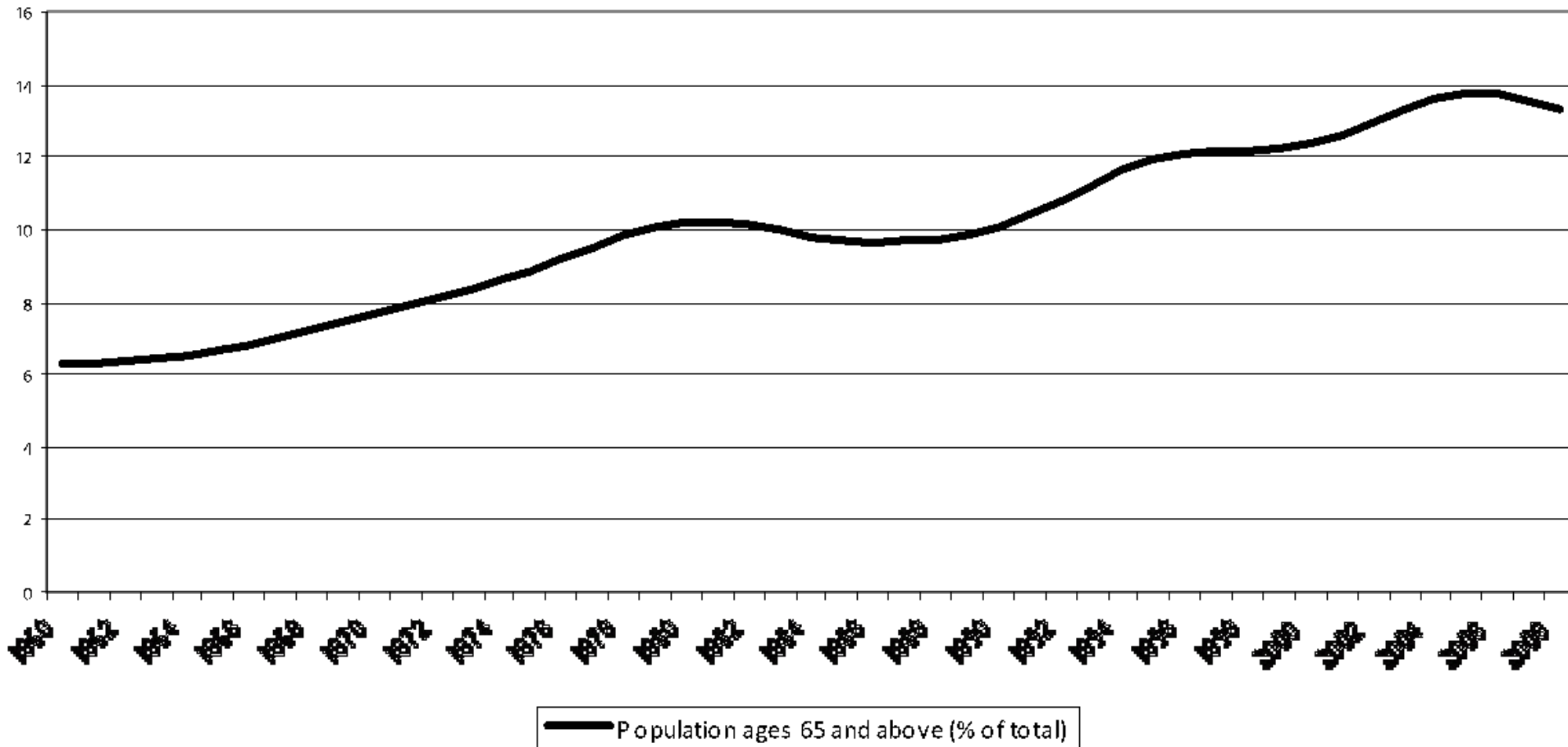
## Household consumption – 50% of GDP; Over 10% y-on-y growth



Source: The World Bank



## The share of population above 65 more than doubled in the last 50 years



## 2 Review of the literature

- Forward-looking agents smooth their marginal utility of consumption across predictable income changes such as retirement (e.g. Modigliani and Brumberg, 1954 and Friedmanm, 1957).
- Hamermesh (1984) shows that American consumers experience a sharp fall in expenditure in the first years after retirement. More recent studies for the US report a decrease in consumption expenditures of at least 5 percent (see Aguiar and Hurst, 2007; Fisher et al., 2008).
- The consumption drop varies across different consumption categories. Spending on total food consumption falls by 7 percent while spending on clothing and transport falls by 18 and 15 percent respectively.
- Evidence on the differential expenditure decline is not limited to the US. Banks et al. (1998) report a similar consumption pattern of retired households in Britain. Miniaci et al. (2010) and Battistin et al. (2009) provide evidence for Italy. The consumption drop at retirement is also documented for Germany (e.g. Schwerdt, 2005 and Lührmann, 2010).

## Russian evidence on consumption smoothing

- Changes in labor supply, Gerry and Li (2010)
- Impact of the 1998 crisis on nutrient intake , Stillman and Thomas (2008)
- Government transfers, Lokshin and Yemtsov (2004)
- Borrowing and selling assets, Skoufias (2003)
- None of the studies focused on consumption smoothing of the pensioners

## 3 The pension system



- Retirement age of 60 for males and 55 for females
- Full pension after accumulating 25 (20) years of service
- Replacement rate of 55 % with upper cap of 3 minimum pensions. In practice replacement rate of pensions is 28 percent on average (State Statistics Service, 2009).
- Early retirement is widespread. In 2003 nearly 24 % of new pension claims were based on special provisions (Sinyavskaya, 2005)
- No provision restricting the right of pensioners to work. Majority of pensioners continue working while receiving a pension.

## 5 Data and sample selection

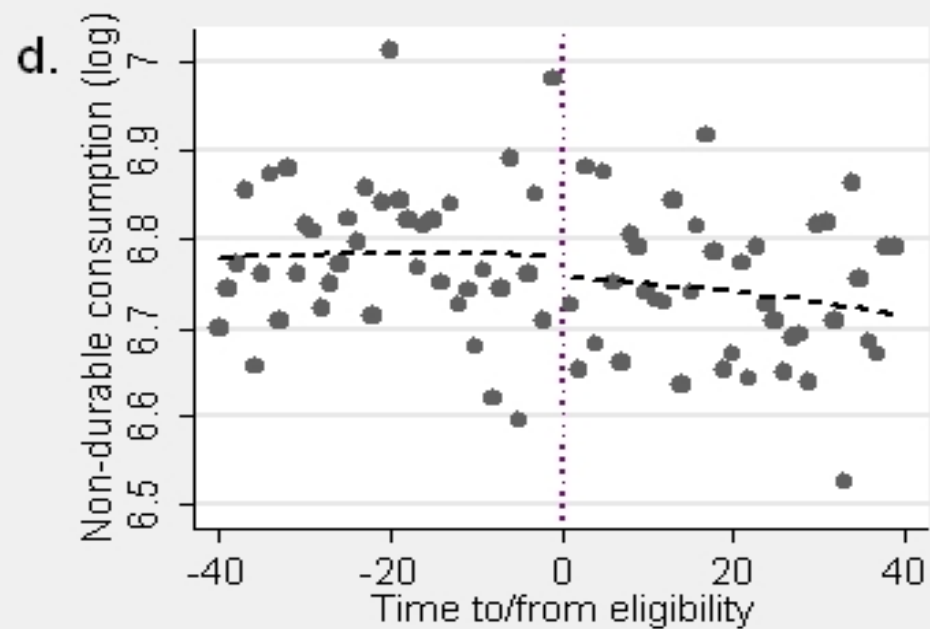
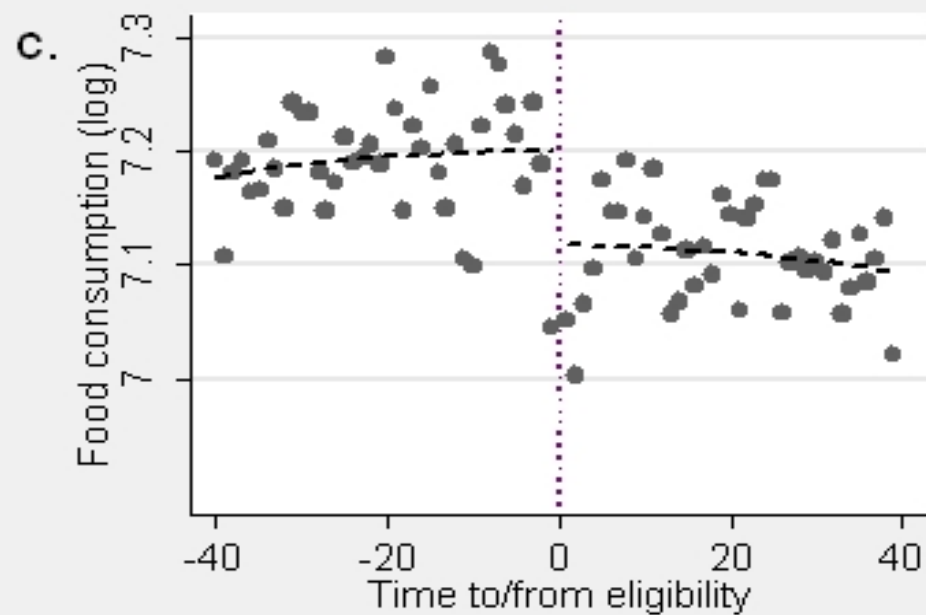
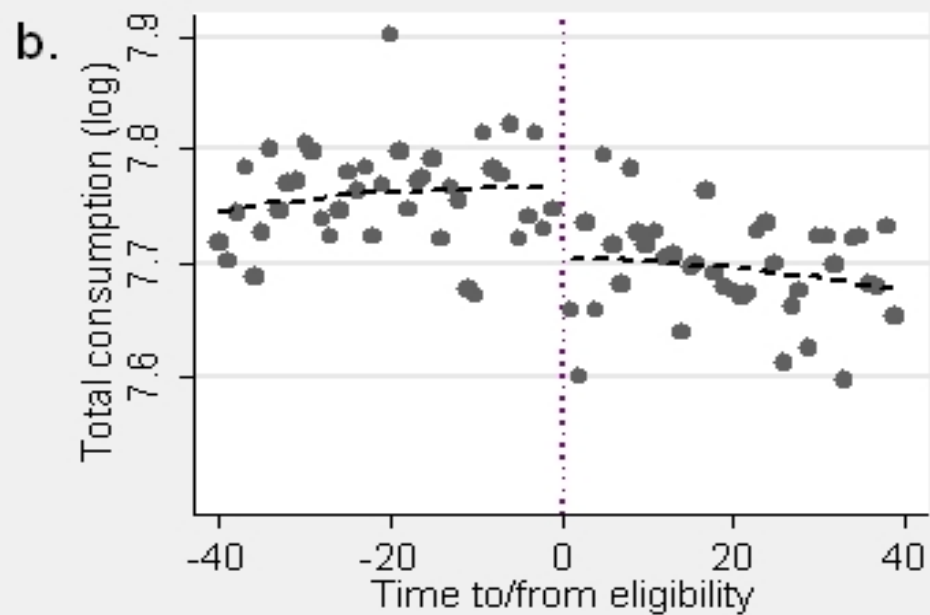
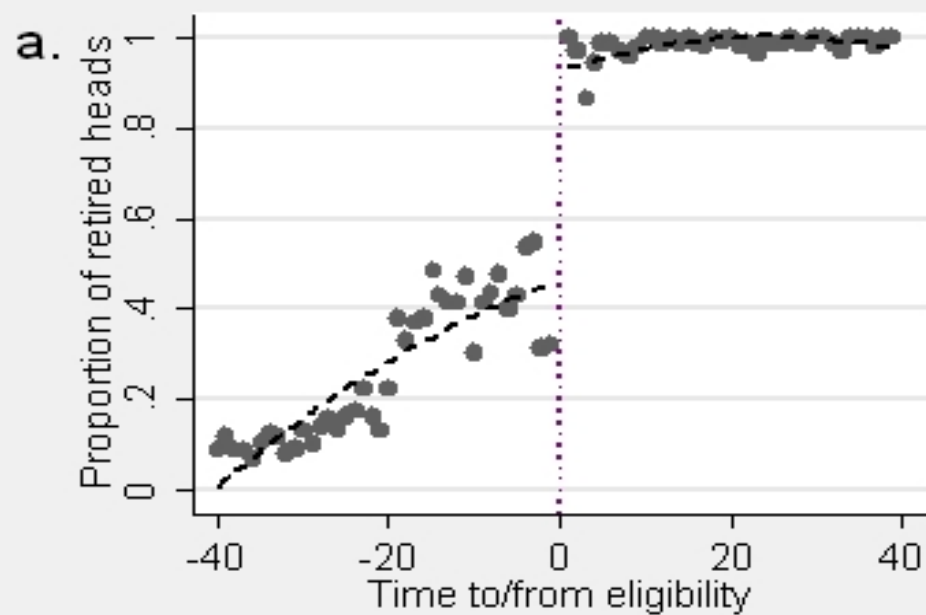
- National Survey of Household Welfare and Social Program Participation (NOBUS)
- Collected by the World Bank and the Federal State Statistics Service (RosStat) in the 2nd quarter of 2003.
- A random sample of 44,529 households and 117,209 people
- The data is representative both at national and regional level
- The information on food consumption includes purchased food, food that is home-produced; food received as a gift or remittances from other households as well as food received from an employer as payment in kind.
- Non-durable consumption includes the value of alcoholic beverages; health; housing, communication; recreation and culture and education expenditures. It also includes the value of government subsidies received by Russian households for expenditures on housing, medical care and transport.
- The estimated consumption is adjusted to take into account regional price differences

- **Eligibility criteria:** We define individuals as being eligible to retire when they reach the statutory retirement age of 60 for males and 55 for females.
- **Retirement Status:** An individual is defined as retired if he/she reports receiving a work-related old-age pension.
  - ◆ Some groups of workers may receive full pension before reaching the statutory retirement age.
- **The head of the household:** The oldest male living in the household
- We restrict the sample to households whose heads are either employed or retired
- We restrict the sample to urban households
- Households with missing information on consumption are excluded

**Table 1: Sample selection criteria**

Description of sample selection procedure	Sample size
Raw data: total number of households	44,506
Step 1: Keep households situated in urban areas	31,399
Step 2: Keep households with male head aged 50 to 70	7,594
Step 3: Keep households whose heads are either employed or retired	6,625
Step 4: Keep households with no missing information on consumption	6,475

## 6 Descriptive statistics



# 7 Identification



- The probability to retire changes discontinuously when an individual reaches retirement age
- The decision to retire may correspond to the regression discontinuity design (e.g. Trochim, 1984; Hahn et al., 2001; Lee and Card, 2008; Imbens and Lemieux, 2008).
- The idea underlying the regression discontinuity design is to compare individuals who are marginally above or below some known eligibility threshold (retirement age in our case) where the probability of being retired changes discontinuously.
- Inference made on the basis of a sample of individuals marginally above and below some known threshold can be as good as a randomized experiment (Lee and Lemieux, 2010)
- In our case the probability of retirement does not change discretely from zero to one thus we have a fuzzy regression discontinuity design

- In our context the causal effect of retirement on consumption can be estimated using two-stage least squares (TSLS) where the endogenous variable, pension receipt, is instrumented by the dummy variable – reaching retirement age
- For this instrument we specify the following regression model of household consumption on the retirement status:

$$Y = \beta_0 + \beta_1 P + f(X - c) + \varepsilon \quad (1)$$

$$P = \gamma_0 + \gamma_1 E + g(X - c) + v \quad (2)$$

- **P** a dummy variable that is equal to 1 if the individual receives pension and 0 otherwise.
- The decision to retire is instrumented by a dummy variable **E** that takes the value 1 if the individual has reached retirement age and 0 otherwise

## 8 Results

**Table 2: Regression discontinuity models, retirement is defined as receiving an old-age pension**

	Total consumption	Food consumption	Non-durable consumption, including government sub.
	(1)	(2)	(3)
Retired	-0.138*** (0.0501)	-0.178*** (0.0674)	-0.0786 (0.0958)
$f(X - c)$	0.000787 (0.000756)	0.00109 (0.000994)	0.000217 (0.00147)
$f(X - c)^2$	-0.0000327*** (0.0000115)	-0.0000372** (0.0000162)	-0.0000269 (0.0000251)
Constant	7.832*** (0.0355)	7.282*** (0.0507)	6.825*** (0.0721)
adj. $R^2$	0.346	0.376	0.050

**Table 4: Overidentification test**

Primary vocational or lower education (dummy)	-0.0644 (0.0576)
Secondary vocational or higher education (dummy)	0.0644 (0.0576)
Age	0.00177 (0.0111)
Age <sup>2</sup>	0.187 (1.348)
Size of dwelling	-1.459 (1.726)
City size > 500,000 (dummy)	-0.0329 (0.0648)
499,000 > city size > 99,000 (dummy)	-0.0370 (0.0735)
50,000 > city size (dummy)	0.0699 (0.0509)

Note: Robust, clustered standard errors in parentheses, \* p<0.1, \*\* p<0.05, \*\*\* p<0.01. People who are within three months of their 60th birthday are excluded. The specifications include quadratic polynomials in age.

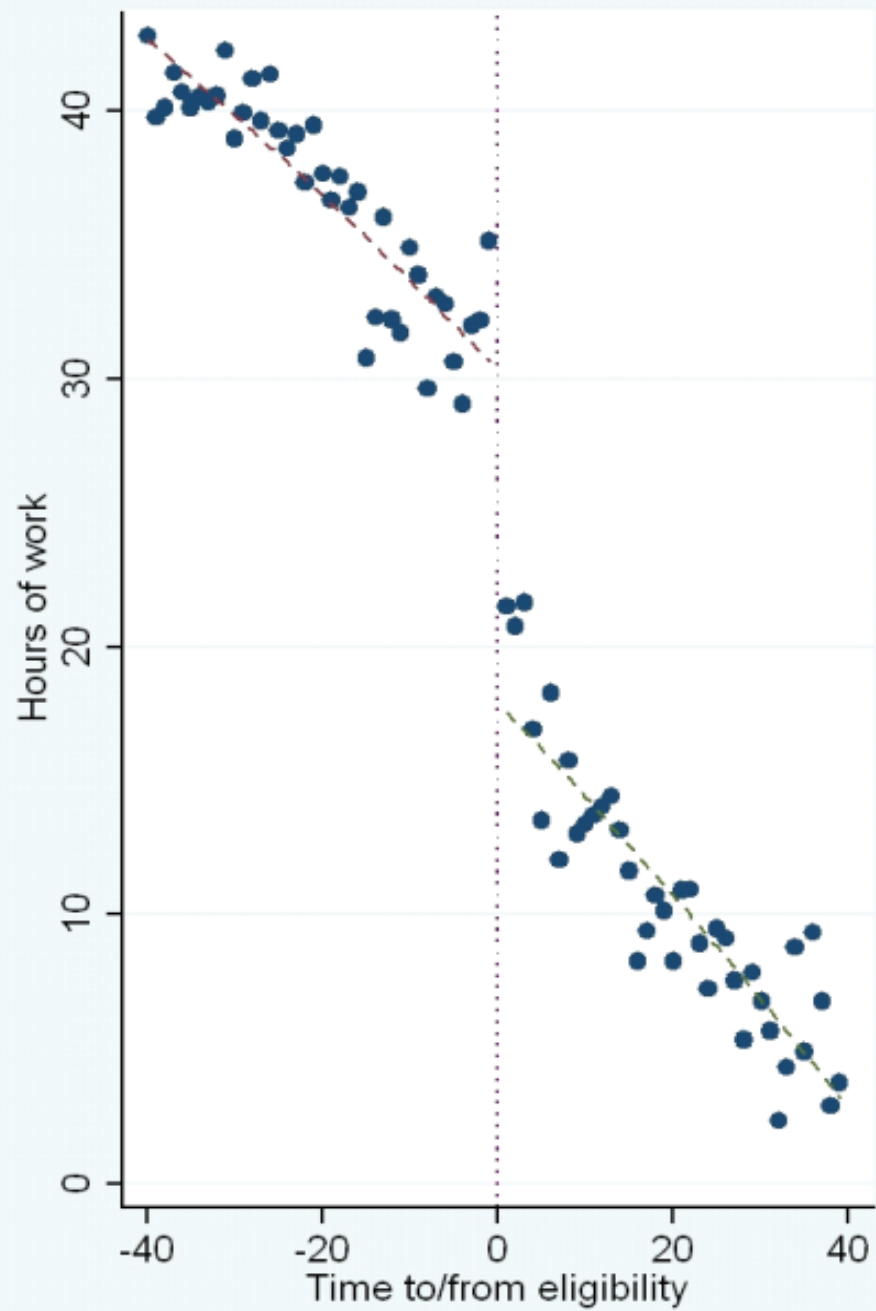


## 9 Extensions

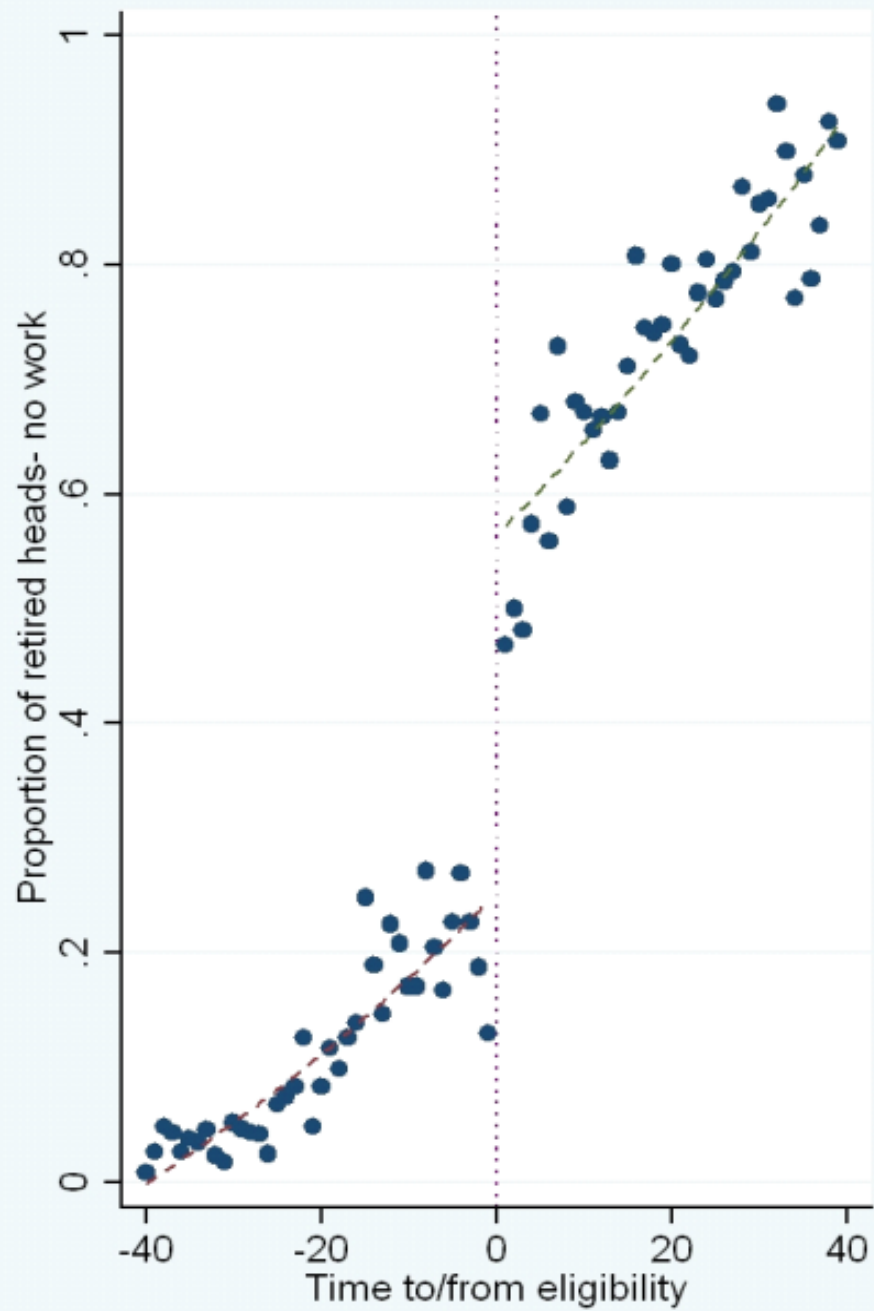
## Hours of work

- No restrictions on pensioners work.
- Kolev and Pascal (2003) find that 35% of Russian males aged 60-65 are employed.
- Additional wages may be important source of income for Russian pensioners.
- New definition of retirement : Receiving a pension and working zero hours.
  - ◆ Higher share pensioners in work and a declining trend as people grow older.

a.



b.





**Table 5: Regression discontinuity models with retirement defined as receiving an old-age pension and working zero hours**

	Total consumption	Food consumption	Non-durable consumption
	(1)	(2)	(3)
Retired	-0.206** (0.0790)	-0.266** (0.110)	-0.117 (0.142)
$f(X - c)$	0.00153 (0.00108)	0.00205 (0.00148)	0.000640 (0.00195)
$f(X - c)^2$	-0.00000760 (0.0000116)	-0.00000477 (0.0000137)	-0.0000126 (0.0000202)
Constant	7.821*** (0.0315)	7.267*** (0.0472)	6.819*** (0.0630)
adj. $R^2$	0.319	0.281	0.066

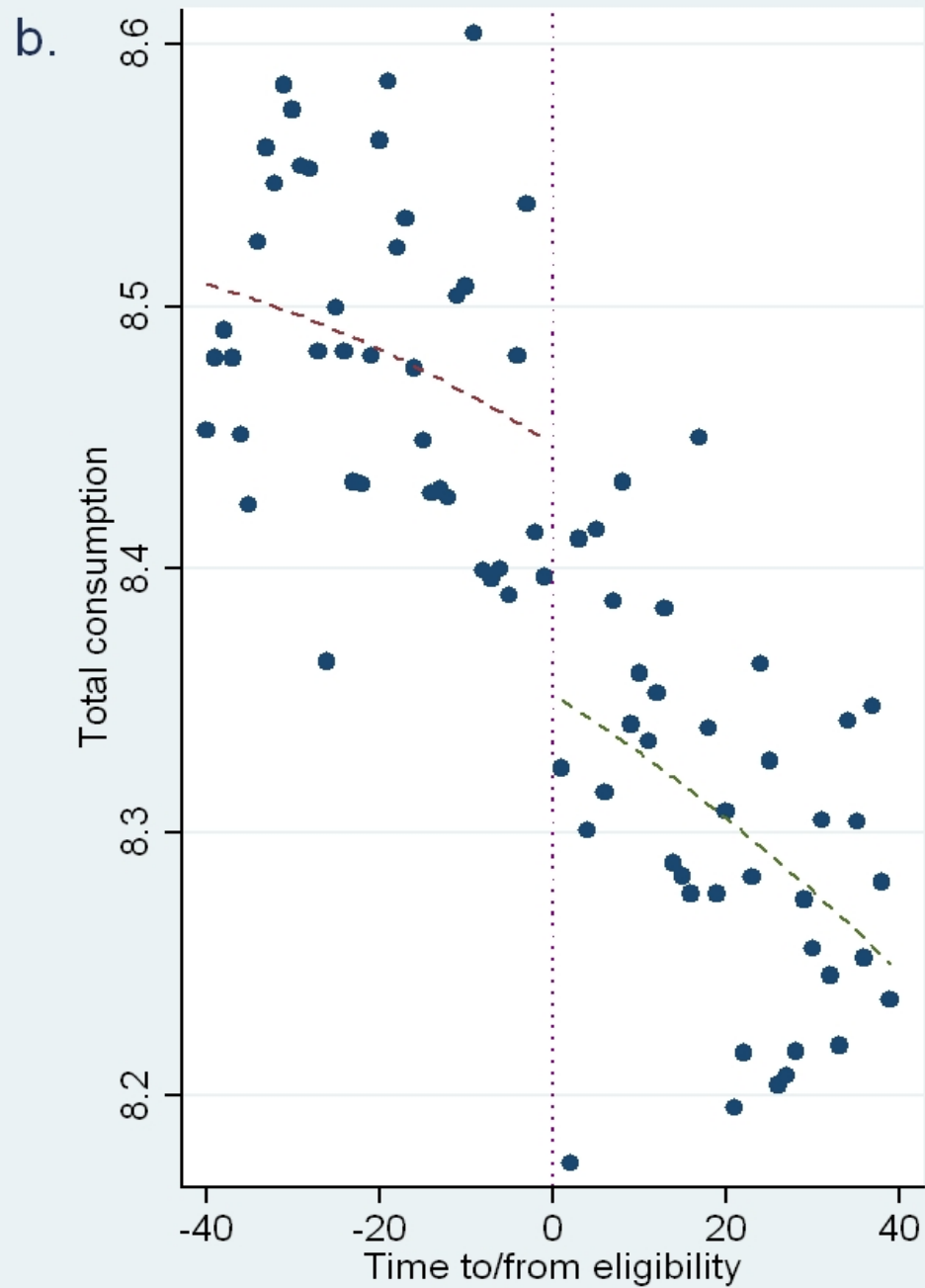
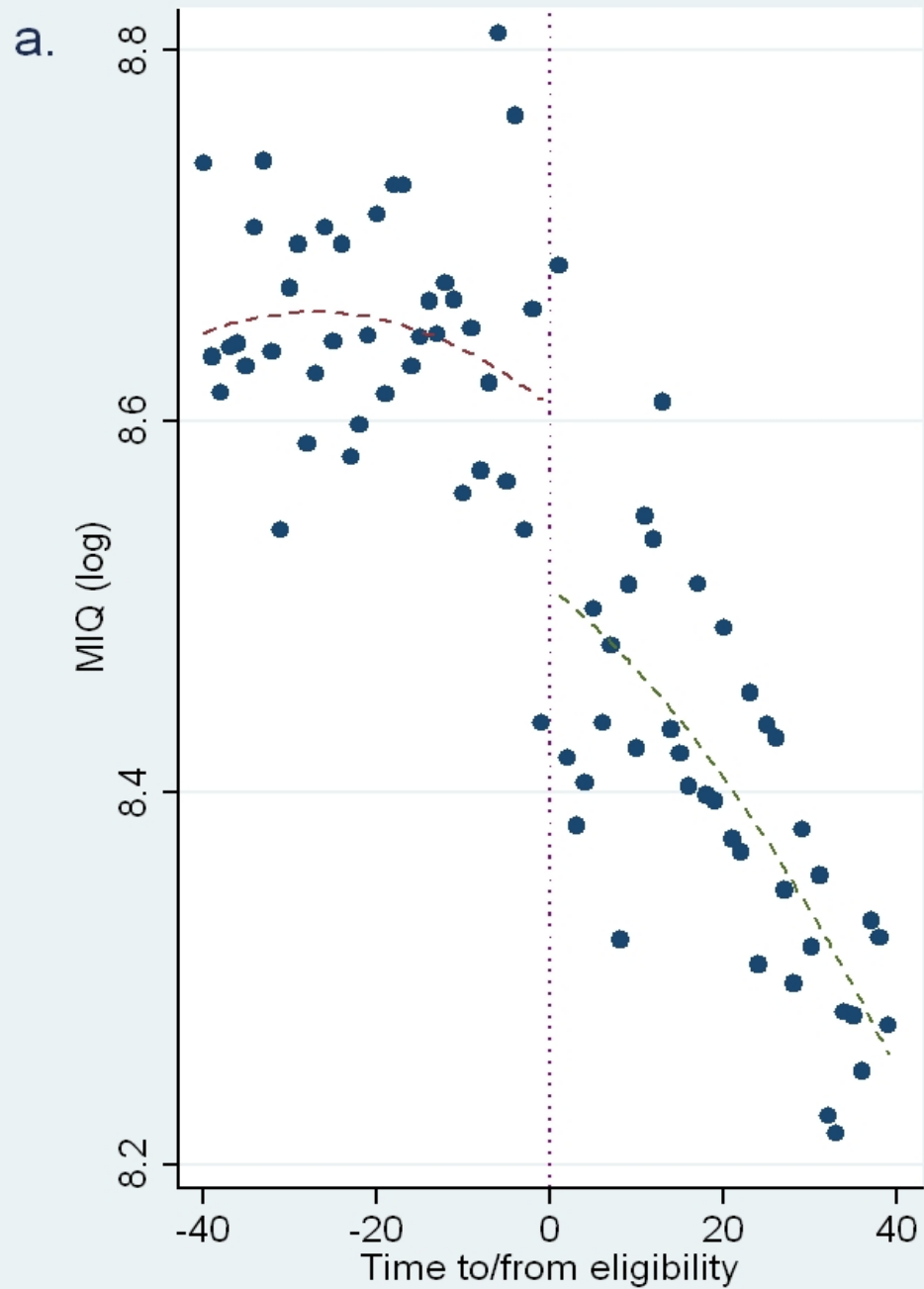
Note: Robust, clustered standard errors in parentheses, \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The dependent variables in all models are in logs. People who are within three months of their 60th birthday are excluded. The first-stage regression of retirement status on pension eligibility, a second-order polynomial in age, yields an  $R^2$  of 0.97 – the coefficient on eligibility is estimated at 0.312, with a standard error of 0.022.

- Until the end of 2004 Russia had a complex system of government in-kind subsidies.
- Most important subsidies were aimed at housing medical and transport expenses.
- Pensioners were the major group of beneficiaries of such subsidies.
- In the survey pensioners were asked about the amount of government subsidies received for health care, housing and transport.
- Estimation of the drop of non-durable expenditures net of government transfers shows that non-durable consumption drop 33 % upon retirement



# Minimum Income Question (MIQ)

- Easterline (2005) shows that aspiration to material goods tends to rise with consumption.
- Easterline (2005) & Blanchflower and Oswald (2008) indicate that although retirement is associated with income drop, life-cycle welfare remains constant or even increases.
- MIQ, Groedhart et al., (1977). “Could you tell us how much money your family needs to live satisfactory?”
- The value of Total consumption is modified to include user value of durables (e.g. flat, car)



**Table 7: Total consumption and the minimum income question**

	Total consumption	Minimum Income Question
	(1)	(2)
Retired	-0.303*** (0.103)	-0.311** (0.147)
$f(X - c)$	0.000206 (0.00137)	-0.00140 (0.00196)
$f(X - c)^2$	-0.00000928 (0.0000135)	-0.0000639*** (0.0000179)
Constant	8.529*** (0.0440)	8.691*** (0.0629)
adj. $R^2$	0.684	0.770

Note: Robust, clustered standard errors in parentheses, \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The dependent variables in all models are in logs. People who are within three months of their 60th birthday are excluded. The first-stage regression for columns (1)-(2), of retirement status on pension eligibility, a second-order polynomial in age, yields an  $R^2$  of 0.97 – the coefficient on eligibility is estimated at 0.312, with a standard error of 0.022.

## 7 Conclusion

- Significant fraction of individuals who reach the retirement age and receive a pension continue to work.
  - ◆ Labor supply after reaching retirement age is found to be an important consumption smoothing strategy of Russian households.
  - ◆ For pension-recipients who stop working after reaching retirement age we find that consumption declines by approx. 20%
- Policy implication:
  - ◆ Increase replacement rate for individuals who are not capable of working after retirement
  - ◆ Raise the minimum retirement age or to introduce restrictions on receiving pensions for people who are working
- Government transfers matter
  - ◆ Improved targeting of government transfers should contribute to the ability to smooth consumption
- The fall in consumption is mirrored by the fall in the subjective perception of sufficient resources.
  - ◆ objectively pensioners require fewer resources due to the elimination of work-related expenditures
  - ◆ subjectively there is adaptation towards decreasing resources available for consumption

## 7 Limitations



- No information on wealth
- No information of health
- Small number of observations does not allow to check if results differ across groups
- Are results stable over time?