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# GOVERNMENT TRANSFERS, WORK AND OCCUPATIONAL IDENTITY: EVIDENCE FROM THE RUSSIAN OLD-AGE PENSION

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# Government Transfers, Work and Occupational Identity: Evidence from the Russian Old-Age Pension

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## Abstract

This paper examines how the receipt of the age-determined Russian state pension impacts the incomes, working hours, self-reported wellbeing, self-employed home production, and health behaviors of individuals. Household panel data spanning 2006-2011 is employed. Regression discontinuity estimators with individual fixed effects identify the causal impact of attaining state pension age on these outcomes. Attaining pension age has large negative causal impacts on market work hours, but also important positive effects on the self-employment output of women, and negative effects on the non-monetized home production activities of men. No positive impacts are found on any subjective measures of wellbeing or economic security. The results are reconciled by augmenting the standard labor supply theory of [Gronau \(1977\)](#) with new ideas about occupational identities first outlined in [Akerlof and Kranton \(2000\)](#).

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# 1 Introduction

Social norms about the behavior of old-age pension recipients may induce substitution between home and market work, and reduce the perceived well-being gains from the transfer. This paper employs the quasi-natural experiment of Russian state old-age pensions to examine how individuals react to receipt of a large, anticipated and universal government transfer. Russia is suited to this analysis because of the pension institutions and the availability of home production data. State pension age in Russia is 55 for women, and 60 for men. Effects of attaining state pension age on formal work, entrepreneurial home-produced output, and non-cash home production are examined. As well, effects on a broad array of subjective wellbeing measures are estimated. A standard labor supply model is tested against the hypothesis that becoming a recipient of state old-age pension has not only income effects but also changes perceptions of the return to various activities. We offer an explanation based on the idea that old-age pension receipt changes occupational identities. Because individuals feel stigmatized or socially validated in economic activities depending on their occupational identity, pension receipt may have more than simply income effects. Even after accounting for potential consumption smoothing before pension receipt, the results are more consistent with a social norms interpretation (Akerlof and Kranton, 2000) than with a standard labor supply model. Causal evidence in this paper shows that pensions may bring about a ‘retirement identity,’ which has been described in other disciplines (Ekerdt, 1986; Szinovacz and DeViney, 1999). We provide a utility framework which incorporates social norms into the labor supply decisions of individuals.

A large empirical literature attempts to ascertain whether or not transfer incomes are used in the same way as other incomes in the household. This ‘labeling effect’ literature (Kooreman, 2000; Edmonds, 2002) generally employs cross-sectional data to compare the propensity to consume on different budget lines out of different income sources. A labeling effect is said to be found if the marginal propensity to consume on child-specific items is

greater from child benefit income than from other income sources. Similar to child benefits, pension income might also be spent differently depending on societal norms. Some studies find that the use of pension income by the recipient (Duflo, 2003; Juarez, 2010), and by other household members (Bertrand et al., 2003), depends on the recipient's sex. Still other research finds no differential use of transfers relative to earned income (Case and Deaton, 1998). Different outcomes might arise across studies if the time changing identity of the recipient is important with some government transfers, but not other incomes.

Findings in this paper suggest that pension income may be accompanied by important non-monetary effects, which can be considered a change in identity. A change in identity might be viewed as an alternative interpretation of effects that have been called labeling in the past. However, it is reasonable to expect that the effects of an identity change extend beyond a sense of obligation to purchase certain goods. Just as welfare or food stamps can induce stigma among recipients (Keane and Moffitt, 1998; Moffitt, 1983; Ranney and Kushman, 1987), pension income may alter workers self-perceptions. A new occupational identity could affect time use because of stigma and perceptions of relative productivity.

Identification of causal effects from transfer income is often obtained using age-specific discontinuities in the probability of qualifying for the benefit. These changes in benefit receipt propensities are generally fully anticipated, since individuals know the rules governing transfer programs such as age-based child benefits. Pension income is similarly anticipated. This expected income is therefore likely to affect household decisions about work, consumption, and expenditure in the run up to the retirement age, as reflected in the work by Bottazzi et al. (2006); Case and Deaton (1998, 2003); Chalmers et al. (2014). Even new programs such as the generous South African old-age pension implemented following the fall of Apartheid can be expected to result in anticipatory behavior which matters to estimation.

Using discontinuity in receipt propensities by age cutoffs may then tend

to bias measures of transfer effects downwards, since even those just under the age cutoff, the control group, are already modifying behavior in response to the future transfer. This anticipation of benefits receipt may be particularly problematic in cross-sectional analysis, since the extent of anticipatory behavioral responses is likely strongly correlated with household and individual-specific unobservables. [Mu \(2006\)](#), for example, finds that Individual heterogeneity affects the response to income changes in Russia.

Panel data cannot fully overcome the potential problem that age-based government transfers are anticipated, even when government programs are new. However, by observing individuals before and after transfer receipt, time-invariant unobservables can be accounted for in estimation. Fixed effects panel data estimators with regression discontinuity can be expected to give relatively unbiased estimates of the causal impact of qualifying for a government transfer on both behavioral and subjective wellbeing outcomes. This will be especially true in the case that individuals cannot formally borrow against future income, which is arguably as true for old-age pensioners in Russia as in Europe, North America, or South Africa. As well, any anticipation can be accounted for by a potentially non-linear variable capturing remaining time to receipt.

The paper proceeds as follows. In Section 2, we explain how simple modification of the standard [Gronau \(1977\)](#) model can account for how changes in occupational identity might change perceived returns to engagement in different economic activities. In Section 3, the data are introduced and summary statistics discussed. Section 4 is devoted to estimation of the causal effect of attaining Russian state pension age on individuals' self-reported occupational identities, incomes, home-produced occupational activities, and a wide array of subjective wellbeing measures. Home production estimates are possible because both cash and non-cash output is measured in this data. The results suggest that attaining state pension age positively impacts the value of home-produced goods which women sell, and reduces the non-monetized contribution of men to productive activities in the home. Despite working

less and having greater incomes, neither men nor women report that their economic rank or subjective wellbeing has increased with achieving pension age. Section 5 concludes.

## 2 Model

The model explains why a change in occupational identity alone could change the optimal time use of an individual. Social norms about paid work, self-employment for cash, and non-cash home production work may differ depending on the occupational identity of an individual. Because of this, effective returns from engaging in different activities are altered by changes in occupational identities. If social norms strongly influence the behavior of individuals through this moderation of effective returns from different activities, the predictions of the [Gronau \(1977\)](#) labor supply model may not be consistent with the data. Transfer income that is accompanied by changes in occupational identities may alter optimal time allocations between different activities.

The [Gronau \(1977\)](#) model of time allocation in home production can be modified to formally introduce social norms associated with different non-leisure activities. The time allocation model with social norms retains the feature that individuals allocate time between market and home production to activities with the highest return, and that they consume leisure when the shadow price of leisure exceeds either of these. The twist is simply that the perceived value of engaging in these different activities has been altered by the occupational identity change. Similar to [Grogan and Koka \(2013\)](#), identities impact wellbeing through a stigma parameter which changes effective budget constraints. Since an individual's perceptions of value are clearly important to choices, beliefs about the return to activities will impact time use.

This simple model can be best illustrated formally using the example of an individual whose occupational identity changes, say from that of 'worker' to that of 'pensioner'. Actual productivity in the home and the market is left unchanged. Preferences are given by the utility function  $U(X, t_L)$ -where  $X$

denotes a composite consumption good that can be produced at home ( $X_H$ ) or purchased in the market ( $X_M$ ), while  $t_L$  denotes leisure time. The utility function satisfies  $U' > 0$  and  $U'' < 0$ .

Market produced goods and home produced goods are assumed to be perfect substitutes in consumption so:  $X = X_M + X_H$ . The technology for producing goods at home is given by:  $X_H = f(t_H)$ , where  $t_H$  denotes time spent in home production with  $f' > 0$ ,  $f'' < 0$ .

Consider the case where, under the new occupational identity as a pensioner, home-based self-employment work for cash is highly regarded. Pensioners gain utility from conforming to a social norm of engagement in home-based activities. By contrast, work in the market is considered, according to prevailing social norms for pensioners, to be performed at the expense of other workers. The social norm regarding home production can be expressed as  $\tau(f(t_H))$ . The value of this function increases progressively with time spent working at home. Occupational identities associated with a social norm of high levels of home production then have  $\tau < 1$  by assumption. However,  $\tau$  acts like a tax or subsidy to home production, in this case increasing the perceived value of a unit of time spent in this activity. Therefore home production with the perceived social norm is given by  $X_H = [1 - \tau(f(t_H))] f(t_H)$ . We also assume that  $\tau'(f(t_H)) f(t_H) > 0$ . An individual then responds to the social norm for pensioners by increasing time spent in home production, even though the marginal productivities in neither home production nor market work have changed.

Alternatively, a new social norm which stigmatizes at least some home production activities makes the total marginal product of individuals in home production decrease faster than prior to the occupational identity change. Even though in a given home production activity the person is just as productive as before, this new stigma changes the perceived marginal productivity of any hour spent in home production. This occurs because there is the same diminishing marginal product in any one home-based activity, but fewer activity choices are available under the new occupational identity. Some

activities may be completely ruled out under the new occupational identity because they carry such stigma. The greater the number of home production activities in which stigma is now faced, the greater is  $\tau(f(t_H))$ .

Time at work  $t_N$  is paid at the rate  $w$  both before and after the occupational change, and income from labor is used to purchase market goods:  $X_M = wt_N$ . However, effective wages are assumed to be moderated by social norms about market work. Social norms about paid work may also change with the occupational identity changes. Thus the individual perceives their effective wage to be  $G(\tau) * w$ , although the employer pays only  $w$ . The budget constraint is given by:  $X = w * G(\tau) * (T - t_H - t_L) + [1 - \tau(f(t_H))] f(t_H)$ . Individuals are also faced with a time constraint:  $T = t_L + t_H + t_N$  where  $T$  denotes total available time. This is the only constraint that is unaltered by the change in occupational identity.

The addition of occupational identity and stigma to the model allows non-monetary effects to coincide with a government transfer. Pension receipt will then have not only an income effect, but also a time allocation effect. A simple illustration shows how distinct occupational identity changes for men and women might lead to different behavior across the sexes when reaching pension age. Figure 1 depicts one potential transition accompanying pension receipt. Before pension age individuals optimize at the point  $E^1$ , spending  $t_L^1$  time in leisure,  $t_N = (h^1 - t_L^1)$  time working, and  $t_H = (T - h^1)$  in home production. At the point  $E^1$ , consumers exhibit good intensive preferences and the marginal rate of substitution between goods and leisure equals the market wage rate ( $\frac{\partial U / \partial t_L}{\partial U / \partial X} = w$ ). Individuals value consumption goods enough that they initially work in the market, prior to the change in occupational identity and receipt of pension income. A consumer is indifferent between working in the market and working at home at point  $A^1$  where  $G(\tau) * w = f'(t_H) [1 - \tau'(f(t_H)) f(t_H) - \tau(f(t_H))]$ .<sup>1</sup>

What happens in terms of time allocation when workers who originally optimize at point  $E^1$  become pensioners? The new allocation of time will

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<sup>1</sup>Assume that  $1 > \tau'(f(t_H)) f(t_H) + \tau(f(t_H))$ .



depend on the change in identity which accompanies pension receipt. Earned incomes and home-based productivity may decline substantially with becoming a pensioner if the associated social norm stigmatizes both. Following this particular change in identity individuals optimize at point  $E^2$ . This occupational identity, which might be associated with men in the Russian data, corresponds to a situation in which the social norm is that this individual should retire to the home and engage only in leisure as pensioners. The perceived home production function for pensioners changes from  $H^1T$  to  $H^2T$ . Under this occupational identity, the non-market labor supplied by men will remain relatively unchanged despite the decrease in market wages. This is illustrated by the relatively small leftward movement of  $h$ . In the absence of an increase in unearned income, the wellbeing effects of this change in occupational identity would be unambiguously negative. However, transfer income from the pension, expands the budget set. Because perceived returns to leisure have increased relative to home and market production pension age individuals increase their leisure time to  $t_L^2$ , and are neither better nor worse off as pensioners than they were beforehand.

Clearly, becoming a pensioner might also increase perceived returns to engagement in some types of home production activities. An alternative occupational identity change is one in which paid work in the market becomes relatively stigmatized with state pension receipt, while work in home produced self-employment activities for cash is relatively valued. Given the same initial conditions, this alternative occupational identity would then lead to a different time allocation. Because workers under this occupational identity may not perceive a home production stigma, their perceived returns to this activity would be higher and the home production curve  $H^2T$  steeper. Potential wages would have effectively fallen, and productivity of home production effectively increased. The point  $A^2$  would therefore be further left. This alternative occupational identity can be associated with women in the data. In the absence of income changes, an individual would generally tend to reduce market work and to substitute into home production. In reality, there will

be both income and substitution impacts of this change in effective wages, since pension receipt increases non-labor incomes. Following the increase in non-labor income from the pension, individuals may not necessarily be better off. Relative to the identity change depicted in Figure 1, these workers optimize at a point to the left of  $E^2$ , spend less time in leisure, and more time in home production. Again, allowing for changes in occupational identity with pension receipt means that the utility effects of the transfer are no longer unambiguously positive, and that changes in not only leisure, but also home production and market work are now possible.

The model makes four testable predictions. The first, an income effect from the government transfer, is also found in [Gronau \(1977\)](#). Workers will reduce labor supply when receiving pension income. The remaining three predictions are new, and follow from the addition social norms and stigmas. The second prediction is that occupational identity may change with receipt of pension. This change can be verified by examining the main occupation reported by workers before and after pension age. Prediction three is that workers may alter their home production because of changes in the perceived returns of this activity. Measures of home production output could provide evidence of this change. The final prediction is in contrast to the standard labor supply model. Depending on social norms, the overall affect of an income transfer on workers utility is not necessarily positive. This fourth prediction can be tested directly using measures of subjective wellbeing and economic security.

### 3 Data and summary statistics

The samples consist of an individual panel spanning 2006-2011, from the RLMS-HSE nationally-representative household survey for Russia. Women aged 46 through 59, and men aged 51 through 64 are included. Restricting the sample to these age groups focuses the analysis around the pension eligibility ages, which are 55 for women and 60 for men, respectively. During this period,

pension eligibility was essentially universal.<sup>2</sup> The average household pension transfer reported in 2006 was 3,028 real roubles. The RLMS-HSE data is suitable for testing the four model predictions because it contains measures of health, subjective wellbeing, labor supply and home production output. Unlike many other studies based on regression discontinuity estimates, the panel structure of this data can be exploited to ensure measured effects are not confounded by individual specific fixed effects or secular time trends.

Workers on either side of the pension receipt age in 2006 are compared in Table 1, separately for each sex. For both women and men, pension age workers spend fewer hours in market production than those who have not reached the eligibility threshold. Women just below age 55 work an average of 116 hours per month, while those who qualify for pension income work about 29 hours per month less. Although these older women are working fewer hours on average in the market, they do not appear to work any less at home. By contrast, pension age men appear to work less in both types of production relative to younger men. Males age 60 and 61 work 34 hours less on average than those aged 58-59, and produce the equivalent of 471 roubles per month less in the home. These differences in time allocations between men and women around their respective pension eligibility thresholds are consistent with distinct changes in occupational identity at pension age.

## 4 Estimation

Estimation employs the discontinuity at state pension age and individual fixed effects to identify how attaining state pension age impacts individual behavior and self-reported wellbeing. Because this discontinuity age differs by sex, estimation is performed separately for men and women. Impacts might accrue both from changes in income with the pension, as in [Gronau \(1977\)](#),

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<sup>2</sup>Following instability in the 1990s ([Jensen and Richter, 2004](#)), the pension system was reformed in 2002 and old-age pension benefits required only 5 years of prior contributions ([Eich et al., 2012](#)).

and also from changes in occupational identity associated with becoming a pensioner. Changes in the occupational identity of an individual, that is becoming a male or a female pensioner, may change the social norms and stigmas associated different activities.

It is not possible to distinguish between these two channels of impact, since both pension incomes and occupational identities may change with the receipt of this income. This is also what precludes employing the attainment of pension age as an instrument for household pension income, or individual incomes: changes in occupational identity associated with attaining pension age directly influence the optimal allocation of an individual's time over activities. The attainment of pension age represents an intent-to-treat estimator (ITT).

$$\begin{aligned}
 OUTCOME_{iht} &= \beta_0 + \beta_1 * PEN_{iht} + \beta_2 * AGE \\
 &\quad + \beta_3 * AGE^2 + \mu_i + \gamma_t + \epsilon_{iht}
 \end{aligned}$$

For the work-related, occupational identity, subjective wellbeing, and household outcomes considered, the coefficient  $\beta_1$  identifies the impact of attaining pension age on individual  $i$  in household  $h$  at time  $t$ . The term  $\mu_i$  captures time invariant individual fixed effects,  $\gamma_t$  represents a set of time dummies. The quadratic term in age is potentially very important in capturing the idea that pension receipt is fully anticipated. However, it will turn out that results are not sensitive to specifications with a linear age term, or no age term. The macroeconomic situation in Russia was relatively stable during 2006-2011, and the secular time trend is captured by year dummies.

## 4.1 Incomes

Results employing this specification are presented in Table 2 for real household income, pension incomes, savings, and household expenditures. For

women, the impact of attaining pension age on household incomes and pensions is an increase of nearly 1000 real roubles (columns (1) and (2) of Panel A). The coefficients for these two specifications do not differ statistically, suggesting that the increase in unearned income with the pension does not have a large crowding out effect on the labor supply of household members. Total household expenditures are not altered by attainment of pension age (column (3)). For women, formal household savings is not statistically altered by the attainment of pension age, although the sign of the coefficient is positive (column (4)). These results are potentially suggestive of consumption smoothing, as people anticipate attaining pension age. As well, they suggest that the higher incomes of women with the pension are partly channelled into activities other than consumption or formal savings, such as lending or transferring.

For men, results are somewhat different, as shown in Panel B of Table 2. The receipt of the pension increases household pension income by about 1,400 real roubles per month (column (2) of Panel B). However, total household incomes are not significantly increased, perhaps because of associated reductions in labor supply by the recipient and other household members. As was the case for women, no statistically significant impacts of attaining pension age on household savings are observed for men. Household expenditures are similarly unaltered by male pension receipt. This is perhaps unsurprising since household incomes are not altered for men by pension receipt.

## 4.2 Work and occupational identity

An individual's self-reported occupational identity, the probability of working outside the home, and hours of work all change substantially with the attainment of pension age. In Panel A of Table 3, using OLS fixed effects, it is shown that women are about 24% more likely to consider their main occupational identity to be 'a pensioner' when they attain pension age. The coefficient  $\beta_1$  measures the discontinuous jump in this age function at a woman's 55th birthday. In 2006 only 7% of women below pension age consider their

main occupation to be ‘pensioner’. As well, women are about 8% less likely to report that they worked outside of the home in the month prior to the interview, and work 14 hours less per month on average, when they attain state pension age. Given that mean work hours for women below pension age is 116 per month in 2006, this is an important reduction.

Similarly, for men, significant reductions in the probability of working outside of the home, and in hours of work are observed. In 2006, mean hours worked by men under pension age was 109. In Panel B of Table 3, it is shown that men reduce by about 20 hours their work time due to attainment of pension age. This reduction is greater than that observed for women, as might be expected since men are so much older if and when they attain pension age. As was true for women, the attainment of pension age results in a large increase, of about 29%, in the probability that a man considers his primary occupation to be a pensioner. Amongst men below pension age in 2006, about 11% considered their main occupation to be a ‘pensioner,’ so this is an important effect.

### 4.3 Subjective wellbeing

Textbook economic theory would predict that wellbeing improves with pension receipt. Although individuals may alter their behavior in anticipation of receipt, when they attain pension age they must work less to obtain a given level of income. Also, pension income in Russia could be considered relatively secure compared to income from employment during this period.

The subjective wellbeing questions included in the RLMS-HSE 2006-11 are:

(i.) **“To what extent are you satisfied with your life at the present time?”**

Respondents could choose one of the following responses: Fully satisfied (1), Rather satisfied (2), Less than satisfied (3), or Not at all satisfied (4).

(ii.) **“And now, imagine please a nine-step ladder, where on the bottom, the first step, stand the poorest people, and on the highest step, the ninth, stand the richest people. On what step are you?”**  
Respondents chose a number in the range 1-9, inclusive.

(iii.) **“And now, imagine please a nine-step ladder, where on the bottom, the first step, stand the powerless people, and on the highest step, the ninth, stand the most powerful people. On what step are you?”**  
Respondents chose a number in the range 1-9, inclusive.

(iv.) **“And now, another nine-step ladder where on the lowest step stand people who are absolutely not respected, and on the highest step stand those who are very respected. On which of the nine steps are you personally standing today?”**  
Respondents chose a number in the range 1-9, inclusive.

(v.) **“Do you think that 12 months from now your family will live better than today, or worse?”**  
Respondents chose from responses: Will live much better (1), will live somewhat better (2), nothing will change (3), will live somewhat worse (4), will live much worse (5).

(vi.) **“To what extent are you concerned about your family’s ability to procure basic necessities in the next twelve months?”**  
Respondents chose from responses: Very concerned (1), a little concerned (2), not very concerned (3), not concerned at all (4).

(vii.) **“Tell me, please, how would you evaluate your health?”**  
Respondents chose from responses: Very good (1), good (2), average (3), bad (4) or very bad (5).

Despite the greater fraction of household income that is unearned, and reductions in hours of work, pension receipt does not generally result in more positive subjective wellbeing responses. Clearly this may be partly because, in years prior to pension eligibility, responses anticipate future receipt. Results are presented using both OLS specifications with individual fixed effects, and ordered probit models with regional (*oblast*) fixed effects. In Panel A of Table 4, OLS results for women are presented. It is shown that coefficients for the pension age dummies are not statistically significant at the 10% level for self-reported economic rank, power rank, the belief that life will be better or worse, concern about getting basic necessities, or the self-reported health evaluation. Coefficients for additional health measures were also insignificant (see Appendix Table A.1), and likely differ from results for the 1990s (Jensen and Richter, 2004) because of the substantial increase in Russian living standards. However, women appear to have life satisfaction scores which are statistically significantly lower at the 10% level if they are of pension age. Although this estimation method may not be ideal for measuring outcomes with ordinal variables, the results are still suggestive. Also the result holds with estimation performed by ordered probit, as shown in Panel B of Table 4. No results show that women of pension age have higher life satisfaction or consider themselves economically more secure, despite greater household income and the reduced work hours.

For men, attaining pension age is also generally not associated with greater subjective wellbeing outcomes. Only for the outcome measure ‘concern about obtaining basic necessities’, and in the OLS estimation, does the coefficient on the pension dummy attain statistical significance. As was the case for women, attaining pension age does not appear to increase life satisfaction. Respondents work less in the market, and have at least the same household income, but they do not consider themselves to be better off.



## 4.4 Home production

The RLMS-HSE contains information on self-employment production for cash, and non-cash home production activities, collected at the household level. In Table 5, it is shown that attaining pension age causes changes in this self-employment output. Home production should be unaffected by changes in non-labor income, if these do not affect the marginal productivity in either market or home work. In fact, pension impacts are found for both sexes. In column (1) of Panel A, it is shown that attaining pension age causes a 214 real rouble per month increase in women’s self-employment output for cash. Non-cash home production, which is probably much more difficult for interviewers of the RLMS-HSE to quantify, is unaffected. For men, self-employment activities for cash are unaffected by attaining pension age (column (1) of Panel B). However, men appear to work less in non-cash home production activities. As men attain pension age, the calculated value of non-cash home production activities decreases by 174 real roubles per month.

These effects on home production are robust to specification changes. Appendix Table A.2 provides a comparison of the original estimates of cash home production in column (1) against specifications that are linear in age and without age controls (columns (2) and (3) respectively). Magnitudes are remarkably consistent across specifications, and the main result of increased home production for women but not men is preserved. Non-cash home production effects are also stable across different controls for age, as shown by columns (4)-(6).

## 5 Conclusions

This paper examines the behavioral and wellbeing impacts of anticipated changes in pension income. Panel data from Russia spanning 2006-2011 is employed. During this period, pensions were generally paid on time, and there were no large employment shocks. To identify causal impacts of the attainment of Russian state pension age, panel data fixed effects models

are combined with a regression discontinuity estimator. Specifically, the discontinuity in pension receipt at Russian state pension age is used to find intent-to-treat effects. The causal impact of attaining pension age on work, self-employment, and non-cash home production activities is then identified conditional on individual-specific fixed effects. State pension age in Russia is 55 for women, but 60 for men, so results are presented separately for the sexes without direct comparison.

The static [Gronau \(1977\)](#) model would predict that an increase in non-labor income leaves home production unaffected, reduces market work and unambiguously increases wellbeing. Augmenting this model allows for the important potential impact of social norms. The model is used to explain why the attainment of state pension age in Russia induces women to substantially increase their self-employment activities, but men to markedly reduce their non-market home production activities. The model can explain why an identical distribution of activities might yield different utility for an individual depending on self-perceived occupational identity. In contrast with the model of [Akerlof and Kranton \(2000\)](#), however, identities impact wellbeing through a stigma parameter which changes effective budget constraints. They are not part of the utility function. This fits the stylized fact that a given wage offer or increase in non-labor income is of differential attractiveness depending on the occupational identity with which it is associated. Where the occupational identity (or social norm) for a pensioner is that she work less in formal jobs but be productive in cash-generating self-employment activities based from home, she may be observed to increase home production as non-labor income increases. Similarly, a man who attains pension age might be observed both to work less in formal jobs and also to work less in non-cash-generating home production activities. Neither might report that they feel greater life satisfaction or that they are better off.

The model prediction, that pension receipt may not improve utility, is upheld in the data. For neither men nor women are subjective wellbeing outcomes positively impacted by the receipt of the Russian state pension. This

pension income is anticipated and may well lead to consumption smoothing. However, this cannot be the full story. Consistent with the model, pension receipt does substantially reduce labor market hours for both men and women. It also significantly increases the fraction of income that is unearned, and women's overall incomes. The subjective wellbeing results suggest that less work, combined with greater unearned income, may not improve utility. Physical wellbeing and health behaviors are also unchanged for both sexes by the pension.

The offered explanation is that becoming a pensioner changes occupational identity in ways that are not universally positive. Changes in occupational identity may reflect changed perceptions of how an individual should behave in order to conform to social norms. Deviation from a social norm induces stigma, which in turn reduces the utility an individual might potentially obtain from performing an action. Because of this, a change in occupational identity might change an individual's optimal distribution of market work, leisure and home production. An anticipated change in a worker's unearned income which coincides with a change in occupational identity might lead to more or less home production, depending on the identity change. Estimation supports these predictions of the model as well. Following pension receipt, workers are more likely to report their occupation as pensioner, and women increase their home production.

This paper offers an interpretation for different causal impacts from attaining state pension age across the sexes: Differences in occupational identities across the sexes, which derive from observations about what pensioners of a given sex actually do, should influence the benefits to the individual of engaging or desisting from an activity. Occupational identities almost certainly vary across the sexes, so that social norms and stigmas associated with being a female pensioner differ from those for males. As well, male life expectancy at birth in Russia is below state pension age for males, while women have more than 20 years residual life expectancy. Clearly other explanations are possible, however, social norms provide one mechanism for reconciling the

empirical results with standard labor supply theory.

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Table 1: Sample means by state pension age and sex, Russia 2006

	hhld income		hhld pensions		hhld savings		home prod. (cash)		home prod. (noncash)		own market hours	
	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
<b>PANEL A: Women aged 53-56 inclusive</b>												
mean	113.5620	114.0111	14.5486	28.9922	3.0616	8.0191	1.9393	4.3402	6.1994	5.4622	115.9923	87.4633
	(7.305)	(6.810)	(1.319)	(1.358)	(0.913)	(1.949)	(0.650)	(2.504)	(1.161)	(0.993)	(7.291)	(7.029)
p-value (equality)	0.517		0.000		0.024		0.359		0.620		0.005	
<b>PANEL B: Men aged 58-61 inclusive</b>												
mean	122.1962	109.9616	25.1395	36.7297	5.2579	4.3797	6.8148	1.8915	8.5299	3.8192	108.5032	73.8367
	(12.103)	(8.535)	(2.301)	(2.014)	(2.473)	(1.550)	(4.704)	(1.109)	(2.296)	(0.652)	(10.005)	(9.843)
p-value (equality)	0.759		0.000		0.769		0.326		0.043		0.014	

Notes: RLMS-HSE 2006 data for workers near age of state pension eligibility: 55 for women and 60 for men. Monetary amounts are real 2002 household roubles, in 100s per month. P-value is from a 2 sample test for equality of means.

Table 2: The causal impact of attaining state pension age on household incomes, pension receipts, expenditures and savings, Russia 2006-2011

	hhld income (1)	hhld pensions (2)	hhld expenditures (3)	hhld formal savings (4)
<b>PANEL A: Women</b>				
woman $\geq 55$	0.7858*** (0.169)	1.2020*** (0.061)	1.0943 (8.126)	1.8152 (1.416)
age	-0.3018 (0.469)	-1.3055*** (0.137)	27.4970 (26.637)	-2.0557 (3.169)
age <sup>2</sup>	-0.0021 (0.003)	0.0104*** (0.001)	0.0720 (0.137)	0.0472* (0.025)
constant	25.5746 (20.790)	40.0811*** (5.551)	-1529.7190 (1195.796)	-20.2198 (123.207)
F-stat	31.48	417.59	2.33	3.17
No. obs.	8115	8250	7720	7720
<b>PANEL B: Men</b>				
man $\geq 60$	8.2997 (7.587)	14.0220*** (1.803)	-5.0348 (11.315)	2.9332 (2.411)
age	14.3658 (19.049)	-10.4750*** (3.824)	36.2293 (26.010)	2.9677 (4.111)
age <sup>2</sup>	0.0627 (0.147)	0.0984*** (0.029)	-0.0885 (0.165)	0.0097 (0.028)
constant	-886.1749 (718.009)	296.5027** (140.558)	-1637.4904 (1070.217)	-194.0490 (165.693)
F-stat	4.10	142.98	1.60	0.72
No. obs.	4042	4043	4043	4043

Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq 55$  and Man  $\geq 60$  are indicators for reaching respective pension ages. OLS estimates include individual fixed effects. Source: RLMS-HSE data from 2006-2011. All outcomes measured at the household level, and responses refer to the month prior to interview. Income amounts are hundreds of real 2000 roubles per month. Robust standard errors in parentheses clustered at the household level.\*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level.



Table 3: The causal impact of attaining state pension age on individual work and self-employment outcomes, Russia 2006-2011

	Received Pension last month (1)	Real Pension last month (2)	Real Income last month (3)	Works outside home (4)	Considers main occ. pensioner (5)	hrs last month formal work (6)	yrs in job if still working (7)	hrs last month if still work (8)
<b>PANEL A: Women</b>								
woman $\geq 55$	0.5438*** (0.025)	1.2020*** (0.061)	0.7858*** (0.169)	-0.0816*** (0.019)	0.2395*** (0.023)	-14.0192*** (3.648)	0.4043 (0.344)	-2.5941 (2.452)
age	0.1131*** (0.041)	-1.3055*** (0.137)	-0.3018 (0.469)	0.1678*** (0.045)	-0.1465*** (0.042)	25.8174** (10.428)	1.1448 (1.014)	2.5944 (7.895)
age <sup>2</sup>	-0.0014*** (0.000)	0.0104*** (0.001)	-0.0021 (0.003)	-0.0014*** (0.000)	0.0011*** (0.000)	-0.1788*** (0.065)	-0.0125* (0.006)	0.0161 (0.040)
wrknow							10.3933*** (0.623)	141.7828*** (3.118)
constant	-1.6273 (1.719)	40.0811*** (5.551)	25.5746 (20.790)	-4.3398** (1.696)	4.7936*** (1.676)	-756.3368* (446.934)	-23.6331 (40.382)	-171.4181 (363.404)
F-stat	92.96	417.59	31.48	17.07	37.85	13.77	31.30	263.21
No. obs.	8250	8250	8115	8250	8250	8197	8033	8197
<b>PANEL B: Men</b>								
man $\geq 60$	0.4322*** (0.036)	1.1365*** (0.097)	0.5973** (0.245)	-0.1129*** (0.029)	0.2878*** (0.034)	-19.7424*** (5.742)	0.3327 (0.962)	-6.7090 (7.879)
age	0.1344*** (0.049)	-1.3811*** (0.231)	-0.8185 (0.621)	0.1344* (0.074)	-0.1964*** (0.067)	4.8285 (14.201)	3.0220 (2.257)	-17.5541 (23.669)
age <sup>2</sup>	-0.0014*** (0.000)	0.0108*** (0.002)	0.0076* (0.004)	-0.0007 (0.001)	0.0012** (0.000)	0.0242 (0.098)	-0.0098 (0.016)	0.0593 (0.163)
constant	-2.8286 (1.783)	44.0733*** (9.478)	26.4763 (25.203)	-4.7824* (2.734)	7.3379*** (2.522)	-239.0504 (561.111)	-126.3750 (91.320)	968.9931 (970.038)
F-stat	34.52	151.50	6.86	13.75	26.50	12.29	1.13	3.19
No. obs.	4216	4216	4142	4216	4216	4183	2022	2183

Notes: Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq 55$  and Man  $\geq 60$  are indicators for reaching respective pension ages. OLS estimates include individual fixed effects. All outcomes are measured at the individual level, and hours of work are reported monthly. Income amounts are hundreds of real 2000 roubles per month. Source: RLMS-HSE data from 2006-2011. Robust standard errors. \*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level. Amongst pension-aged women in the sample, 96% had received a pension in the month prior to the interview in 2006, and in 2011 97% had received the pension. Amongst male pensioners in 2006, 94% had received the pension and in 2011 98% had received the pension in the month prior to the interview.

Table 4: The causal impact of attaining state pension age on subjective wellbeing outcomes, Russia 2006-2011

	life satisfaction (1)	economic rank (2)	power rank (3)	respect rank (4)	believe life better/worse (5)	concern basic necessities (6)	self-reported health eval. (7)
<b>PANEL A: Women - OLS</b>							
woman $\geq 55$	-0.0815* (0.048)	0.0961 (0.064)	0.0379 (0.069)	0.0342 (0.075)	0.0012 (0.042)	-0.0367 (0.052)	-0.0284 (0.025)
age	0.0145 (0.145)	-0.3589** (0.166)	-0.2310 (0.188)	-0.1059 (0.210)	-0.2094** (0.105)	-0.1133 (0.151)	0.0272 (0.070)
age <sup>2</sup>	0.0011 (0.001)	0.0021* (0.001)	0.0001 (0.001)	0.0011 (0.001)	0.0005 (0.001)	0.0005 (0.001)	0.0005 (0.000)
constant	-0.6249 (6.271)	16.6476** (6.610)	15.3166* (7.844)	8.5215 (8.787)	12.5899*** (4.217)	6.5852 (6.393)	0.1397 (2.979)
F-stat	7.74	3.99	2.17	4.69	4.64	4.38	3.31
No. obs.	8208	8157	8082	7977	6745	8191	8216
<b>PANEL B: Women - Ordered Probit</b>							
woman $\geq 55$	-0.1966** (0.084)	0.0858 (0.088)	-0.0127 (0.085)	0.1140 (0.089)	-0.0704 (0.105)	0.0443 (0.088)	-0.0824 (0.107)
age	-0.0129 (0.142)	-0.1945 (0.146)	0.0810 (0.138)	-0.0099 (0.144)	0.1017 (0.163)	0.0136 (0.147)	0.0136 (0.173)
age <sup>2</sup>	0.0003 (0.001)	0.0014 (0.001)	-0.0011 (0.001)	-0.0001 (0.001)	-0.0005 (0.001)	-0.0001 (0.001)	0.0006 (0.002)
F-stat							
No. obs.	8024	7974	7899	7796	6586	8007	8032

Continued on the next page

Notes: Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq 55$  and Man  $\geq 60$  are indicators for reaching respective pension ages. OLS estimates include individual fixed effects, with robust standard errors. Ordered probit estimates with clustered standard errors include local (oblast) fixed effects, but not individual fixed effects. All outcomes are measured at the individual level, from numerical indexes. Life satisfaction scored 1-5 (increasing). Power, respect and economic rank 1-9 (increasing). Belief that life will be better or worse on a decreasing scale of 1-5, where 3 represents no change. Concern for future (1-4) and self reported health (1-5) are scaled decreasing. Source: RLMS-HSE data from 2006-2011.\*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level.

Table 4 continued from previous page

	life satisfaction (1)	economic rank (2)	power rank (3)	respect rank (4)	believe life better/worse (5)	concern basic necessities (6)	self-reported health eval. (7)
<b>PANEL C: Men - OLS</b>							
man $\geq$ 60	0.0010 (0.071)	0.1148 (0.085)	0.1033 (0.102)	0.0749 (0.107)	-0.0447 (0.060)	0.1437* (0.086)	0.0368 (0.039)
age	-0.0201 (0.226)	0.0125 (0.236)	0.0329 (0.276)	-0.4958 (0.307)	0.0289 (0.158)	-0.2764 (0.242)	-0.0032 (0.103)
age <sup>2</sup>	-0.0006 (0.001)	0.0011 (0.002)	0.0010 (0.002)	0.0032 (0.002)	-0.0013 (0.001)	0.0024 (0.002)	-0.0001 (0.001)
constant	6.2716 (9.807)	-0.4768 (9.569)	-1.6519 (11.127)	23.5346** (11.625)	5.6261 (6.650)	9.9394 (9.935)	3.4296 (3.914)
F-stat	3.20	1.85	1.42	2.02	2.71	1.80	3.43
No. obs.	4199	4149	4131	4047	3540	4188	4207
<b>PANEL D: Men - Ordered Probit</b>							
man $\geq$ 60	-0.0560 (0.120)	0.0994 (0.121)	0.1460 (0.123)	0.1381 (0.119)	0.0961 (0.145)	0.1095 (0.127)	0.1433 (0.142)
age	-0.4157* (0.214)	0.2612 (0.222)	0.2633 (0.211)	-0.1449 (0.225)	0.4414** (0.225)	0.0611 (0.196)	0.0824 (0.250)
age <sup>2</sup>	0.0036** (0.002)	-0.0024 (0.002)	-0.0025 (0.002)	0.0011 (0.002)	-0.0035* (0.002)	-0.0003 (0.002)	-0.0000 (0.002)
F-stat							
No. obs.	4112	4062	4044	3960	3467	4101	4120

Notes: Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq$  55 and Man  $\geq$  60 are indicators for reaching respective pension ages. OLS estimates include individual fixed effects, with robust standard errors. Ordered probit estimates with clustered standard errors include local (oblast) fixed effects, but not individual fixed effects. All outcomes are measured at the individual level, from numerical indexes. Life satisfaction scored 1-5 (increasing). Power, respect and economic rank 1-9 (increasing). Belief that life will be better or worse on a decreasing scale of 1-5, where 3 represents no change. Concern for future (1-4) and self reported health (1-5) are scaled decreasing. Source: RLMS-HSE data from 2006-2011.\*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level.

Table 5: The causal impact of attaining state pension age on household self-employment productivity, total expenditures, health expenditures, and time use of other household members, Russia 2006-2011

	Home prod. cash (1)	Home prod. non-cash (2)	hhld cash assistance (3)	Real expend. health (4)	Mkt work other hhld females (5)	Mkt work other hhld males (6)
<b>PANEL A: Women</b>						
woman $\geq 55$	2.1423*** (0.808)	0.2458 (0.631)	-9.6103 (129.521)	18.2007 (104.539)	-2.5789 (3.515)	1.5888 (5.773)
age	-4.0244 (2.576)	-0.1249 (1.573)	263.4470 (271.905)	-280.0137 (306.057)	1.3449 (9.478)	34.9222** (15.250)
age <sup>2</sup>	0.0375** (0.019)	-0.0038 (0.010)	-1.7813 (2.313)	1.5825 (1.857)	-0.0516 (0.069)	-0.2165** (0.097)
constant	110.6842 (92.938)	22.8693 (62.310)	-8169.5527 (10853.320)	10879.6743 (13194.693)	110.7776 (365.183)	-1120.7076* (648.344)
F-stat	1.78	3.38	2.02	1.28	1.16	6.23
No. obs.	7681	7494	7720	7720	8197	8250
<b>PANEL B: Men</b>						
man $\geq 60$	-1.9530 (1.717)	-1.7432* (1.031)	86.5856 (171.516)	-92.7437 (128.186)	-3.3262 (6.608)	6.3678 (4.888)
age	-0.2432 (3.230)	2.1149 (2.429)	-1366.7739** (663.253)	187.6799 (334.993)	-8.0497 (15.597)	-6.0812 (18.416)
age <sup>2</sup>	-0.0075 (0.019)	-0.0042 (0.019)	9.0457** (4.027)	-1.0782 (1.841)	0.1085 (0.112)	0.0927 (0.124)
constant	42.6998 (160.320)	-98.9906 (113.276)	49035.7071* (26780.260)	-6686.1828 (16441.123)	212.5960 (605.139)	86.7420 (699.598)
F-stat	0.89	4.16	2.16	1.73	5.39	0.86
No. obs.	4018	3915	4043	4043	4216	4183

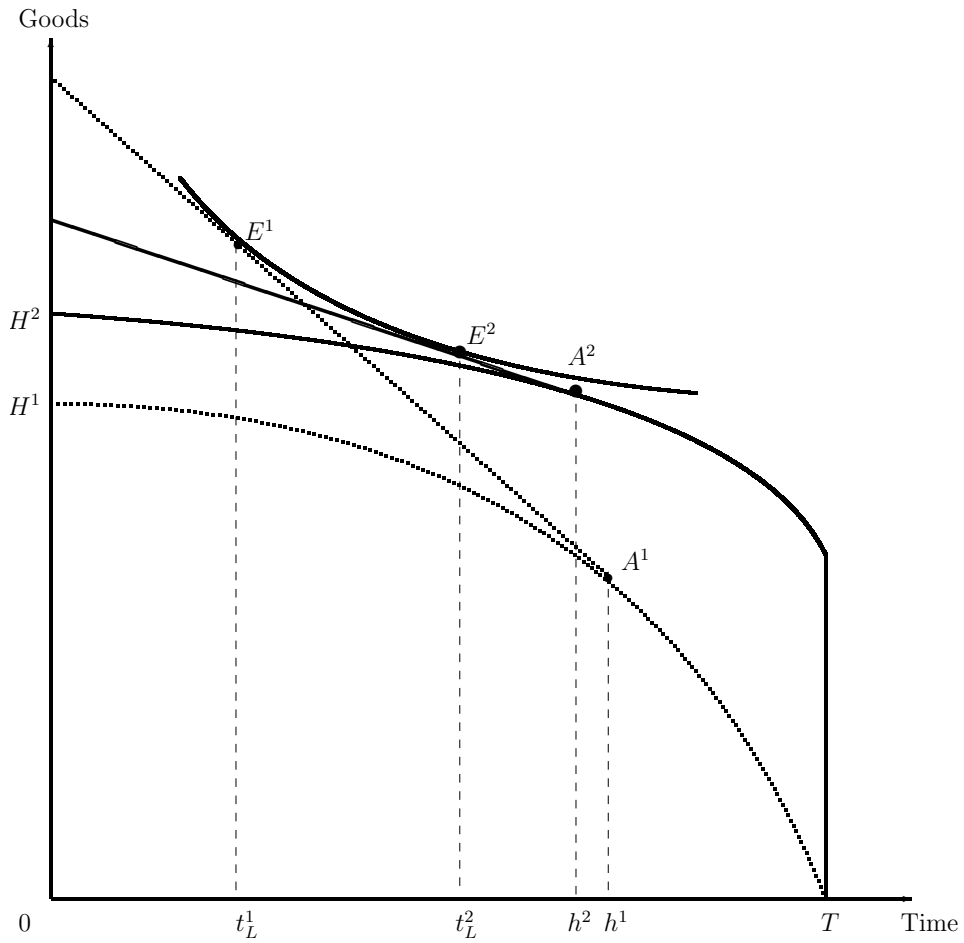
Notes: Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq 55$  and Man  $\geq 60$  are indicators for reaching respective pension ages. OLS estimates include individual fixed-effects. Robust standard errors.\*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level. Productivity in home production is measured at the household level, with imputation for non-monetized home production performed by RLMS-HSE staff. Market work in columns (6) and (7) is measured as total hours of market work performed by all other household members interviewed in the RLMS-HSE adult samples.

Table 6: Robustness Checks. The causal impact of attaining state pension age on household activities for cash and non-cash work, Russia 2006-2011

	Home production cash			Home production non-cash		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>PANEL A: Women</b>						
woman $\geq 55$	2.1423*** (0.808)	2.1034*** (0.802)	2.1046*** (0.799)	0.2458 (0.631)	0.2491 (0.630)	0.2362 (0.629)
age	-4.0244 (2.576)	0.0550 (1.261)		-0.1249 (1.573)	-0.5373 (0.918)	
age <sup>2</sup>	0.0375** (0.019)			-0.0038 (0.010)		
constant	110.6842 (92.938)	0.6980 (66.564)	3.5962*** (0.523)	22.8693 (62.310)	33.9423 (48.373)	5.6352*** (0.339)
F-stat	1.78	2.00	2.33	3.38	3.75	4.36
No. obs.	7681	7681	7681	7494	7494	7494
<b>PANEL B: Men</b>						
man $\geq 60$	-1.9530 (1.717)	-2.0082 (1.789)	-2.0227 (1.793)	-1.7432* (1.031)	-1.7750* (1.031)	-1.7542* (1.031)
age	-0.2432 (3.230)	-1.1445 (2.850)		2.1149 (2.429)	1.6110 (2.162)	
age <sup>2</sup>	-0.0075 (0.019)			-0.0042 (0.019)		
constant	42.6998 (160.320)	69.6846 (160.963)	4.9637*** (1.128)	-98.9906 (113.276)	-83.9823 (122.159)	7.0898*** (0.446)
F-stat	0.89	0.99	1.14	4.16	4.38	5.08
No. obs.	4018	4018	4018	3915	3915	3915

Notes: Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq 55$  and Man  $\geq 60$  are indicators for reaching respective pension ages. OLS estimates include individual fixed effects. Robust standard errors. \*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level. Productivity in home production is measured at the household level, with imputation for non-monetized home production performed by RLMS-HSE staff.

Figure 1: Time Allocation Before and After Pension Receipt



Pension receipt increases income but is accompanied by a decrease in effective returns from market work. Home production is also stigmatized. The change in optimal time allocation includes a relatively large increase in leisure and a negligible change in home production.

## Appendix

Table A.1: The causal impact of attaining state pension age on health and health behaviors, Russia 2006-2011

	Self-eval. health (1)	minutes exercies (2)	no. cigs last month. (3)	gm alcohol last month (4)	self-reported weight (5)	hospitalized last 3 months (6)
<b>PANEL A: Women</b>						
woman $\geq 55$	-0.0455 (0.077)	-0.5682 (5.940)	0.1844 (0.129)	4.2656 (6.930)	0.3969 (0.283)	-0.0115 (0.010)
age	-0.0831 (0.238)	15.2260 (16.298)	-0.5025 (0.359)	33.4860 (24.242)	2.2271*** (0.828)	-0.0086 (0.029)
age <sup>2</sup>	-0.0005 (0.001)	0.0232 (0.114)	0.0013 (0.002)	-0.0832 (0.138)	-0.0171*** (0.006)	0.0000 (0.000)
constant	10.3901 (11.053)	-846.9852 (648.997)	24.1162 (16.987)	-1475.3575 (1035.284)	5.9618 (33.940)	0.4488 (1.126)
F-stat	0.33	1.43	1.51	1.42	13.84	0.96
No. obs.	5456	5457	8250	8250	7914	8250
<b>PANEL B: Men</b>						
man $\geq 60$	0.1378 (0.092)	2.5161 (11.494)	0.2889 (0.473)	3.7000 (43.486)	-0.3808 (0.421)	0.0159 (0.019)
age	-0.0220 (0.236)	-43.4073 (53.058)	-2.8394** (1.214)	67.2421 (137.404)	0.8221 (1.250)	0.0138 (0.047)
age <sup>2</sup>	-0.0002 (0.002)	0.0876 (0.149)	0.0079 (0.008)	-0.2847 (0.990)	-0.0080 (0.008)	-0.0000 (0.000)
constant	6.5022 (10.014)	2198.7034 (2763.118)	145.9475*** (48.216)	-2518.1314 (5507.749)	57.5622 (50.771)	-0.5982 (1.795)
F-stat	0.53	0.48	4.40	2.78	1.89	0.87
No. obs.	2806	2796	4211	4210	3986	4216

Notes: Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq 55$  and Man  $\geq 60$  are indicators for reaching respective pension ages. OLS estimates include individual fixed effects. Robust standard errors.\*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level. Self evaluated health is measured on a scale of 1-5 (decreasing). Weight measured in kilograms, Alcohol in grams.

Table A.2: Robustness Checks. The causal impact of attaining state pension age on household activities for cash and non-cash work, Russia 2006-2011

	Home production cash			Home production non-cash		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>PANEL A: Women</b>						
woman $\geq 55$	2.1423*** (0.808)	2.1034*** (0.802)	2.1046*** (0.799)	0.2458 (0.631)	0.2491 (0.630)	0.2362 (0.629)
age	-4.0244 (2.576)	0.0550 (1.261)		-0.1249 (1.573)	-0.5373 (0.918)	
age <sup>2</sup>	0.0375** (0.019)			-0.0038 (0.010)		
constant	110.6842 (92.938)	0.6980 (66.564)	3.5962*** (0.523)	22.8693 (62.310)	33.9423 (48.373)	5.6352*** (0.339)
F-stat	1.78	2.00	2.33	3.38	3.75	4.36
No. obs.	7681	7681	7681	7494	7494	7494
<b>PANEL B: Men</b>						
man $\geq 60$	-1.9530 (1.717)	-2.0082 (1.789)	-2.0227 (1.793)	-1.7432* (1.031)	-1.7750* (1.031)	-1.7542* (1.031)
age	-0.2432 (3.230)	-1.1445 (2.850)		2.1149 (2.429)	1.6110 (2.162)	
age <sup>2</sup>	-0.0075 (0.019)			-0.0042 (0.019)		
constant	42.6998 (160.320)	69.6846 (160.963)	4.9637*** (1.128)	-98.9906 (113.276)	-83.9823 (122.159)	7.0898*** (0.446)
F-stat	0.89	0.99	1.14	4.16	4.38	5.08
No. obs.	4018	4018	4018	3915	3915	3915

Notes: Impacts exploit discontinuity at age of state pension eligibility. Woman  $\geq 55$  and Man  $\geq 60$  are indicators for reaching respective pension ages. OLS estimates include individual fixed effects. Robust standard errors. \*\*\* significant at 1% level, \*\* significant at 5% level, \* at 10% level. Productivity in home production is measured at the household level, with imputation for non-monetized home production performed by RLMS-HSE staff.