The Determinants of Consumption of 50+ Population in Croatia

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Abstract

The aim of this paper is to explore the basic features of consumption of 50+ population in Croatia by using the data from Survey of Health, Ageing, and Retirement in Europe – SHARE (SHARE, 2017). Thereby we use an extended model of consumption that includes basic consumption determinants that are stipulated by the economic theory and empirical research, namely income and wealth which are retrieved from SHARE database and augment it with other economic and socio-demographic features of „50+" population that may exhibit an influence on consumption decisions. In order to model household consumption, we use ordinary least squares (OLS) method when estimating the baseline regression equation. Additionally, control variables labour status, gender and marital status are used in order to explore whether the household consumption is more responsive to changes in household income and wealth for specific groups of respondents. The results of the analysis indicate that retired individuals have higher marginal propensity to consume compared to the employed individuals, which is in line with the life-cycle theory.

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Introduction

Regarding the population ageing in Europe, the adequate level of resources for sustaining the standard of life at retirement is a prominent issue Browning and Madsen (2005). In that sense, consumption is often used to approximate the tangible well-being of individuals, what is related to life-cycle model of Modigliani (1985). Life-cycle model outlines that individuals allocate resources rationally in order to maximize utility throughout the life-cycle. Individuals' income is changing through life-cycle and savings serve to allocate income from periods of higher income to periods with lower income. Therefore, in mentioned model, consumption is stable throughout life-cycle regardless of changes in income and because of that consumption is considered a more plausible measure of well--being of 50+ population than income (Browning and Madsen, 2005). Hence, for individuals whose main source of income is labour, this means that around retirement their income decreases and consumption remains more or less at the same level. This is why we consider consumption as being an adequate measure of the material well-being of older individuals. Moreover, Banks, Blundell and Tanner (1998) point out that consumption decreases after retirement what cannot be fully explained using life-cycle model, which is also known as „retirement--savings puzzle" or „retirement-consumption puzzle".

The Survey of Health, Ageing and Retirement in Europe (SHARE) studies ageing and its impact on people with various cultural and economic background (Börsch-Supan, 2018). SHARE provides important insights into population ageing across Europe and it is conducted in three specific phases: before retirement, after retirement, and for oldest living respondents. Population ageing in Europe has accentuated the need to recognize the problems of advanced years and increase their life quality by fostering support for ageing population (Hlebec and Filipovič Hrast, 2018). The research of Börsch-Supan et al. (2008) outlines that savings and consumption pattern change with retirement and SHARE endeavours to report these changes along with other important aspects of ageing. When analysing income and consumption, Börsch-Supan et al. (2008) also indicate that income of 50+ population in European countries differs largely between countries and it is not proven consistently that consumption drops after retirement. Authors pointed to significant difference only for food consumption across newly retired and employed in Southern Europe.

In line with Borella, Coda Moscarola and Rossi (2014), the importance of assessing the possible decrease of consumption of the 50+ population is not only in the empirical evaluation of life-cycle model. In an ageing country such as Croatia, it is crucial for economic policy makers to recognize and analyse the determinants of consumption of the ageing population.

Regarding different estimation methods for survey data and considering that there are very pronounced differences in income and wealth, particularly among „50+" individuals facing retirement or already retired, in this paper we are mainly interested in income, consumption and wealth distribution in Croatia. The main motivation behind this paper is to offer new insights into household consumption of 50+ population in Croatia, by using various types of income and wealth that are available from SHARE database and augment it with other economic and socio--demographic features that may exhibit influence on their consumption decisions. This paper contributes to the literature by exploring the impact of socio-economic factors on the consumption of 50+ population at the household level in Croatia as a post-transitional country using survey data, whereas the average age of respondents is 67 years. To the authors' knowledge, this is the first paper that addresses the mentioned problem. In this field, previous research of Šonje, Časni and Vizek (2012), Šonje, Časni and Vizek (2014), Časni (2014), Časni and Vizek (2014) used macroeconomic data and analysed aggregate consumption in Post--Transition Economies regardless of age, while Dumičić, Čeh Časni and Palić (2013) and Jurčić and Čeh Časni (2016) are focused on consumption in Croatia.

The paper is structured as follows. The background of the study describing 50+ population and retirement system in Croatia is given in the next section. It is followed by relevant literature review on consumption determinants. Then data description and methodology are presented. The central part of the paper provides empirical analysis and discussion. Finally, the last section provides a conclusion.

1. Background: 50+ Population and Retirement System in Croatia

Population ageing is a long-term trend that has begun in Europe a few decades ago. This trend is visible in changes in the population age structure and it is reflected in the growing proportion of older people while reducing the share of workers in the total population. The share of persons aged 65 or older in the total population has increased in all EU Member States, EFTA countries and candidate countries. According to Eurostat data, in the period from 2006 to 2016, an increase of 2.4 percentage points has been recorded for all 28 EU countries. On the other hand, the share of the population aged 0 – 15 has decreased by 0.4 percentage points.

There are two fundamental determinants of the population ageing. The first one is „greying", which implies the extension of human life (Puljiz, 2016). This pattern has been visible for several decades due to an increase in life expectancy. Life expectancy has increased rapidly over the last century due to a reduction of infant mortality, increased living standards, improved lifestyle, better education

as well as health and medicine advancement. On the contrary, there is a second determinant defined as „ageing from below" or „dejuvenilization", based on the reduced fertility rate and a small number of children and young people who will soon become an active contingent of the population (Puljiz, 2016).

According to the 1961 and 2011 population censuses in Croatia, the comparison of the number and share of the old population in the total population points to a significant increase in the absolute and relative terms. The number of old people in the total population increased by 146.1%, while the coefficient of age increased from 7.4% in 1961 to 17.7% in 2011 (Peračković and Pokos, 2015). The research of Čipin and Smolić (2013) outlines that the ratio of older than 65 years to younger than 15 years in Croatia has been more than 100 for more than one decade. Moreover, according to Eurostat (2018), the recorded percentage of people at risk of poverty or social exclusion in 2016 is 29.9% for individuals aged 50 to 64 years, whereas it equals 29.5% for men and 30.4% for women. When compared to the average of EU-27, namely European Union countries without Croatia, total percentage of people aged 50 – 64 is 24.2%, for women it equals 25.4% and for men 22.9%, what is noticeably lower in comparison to Croatia. In addition, the mentioned percentage for individuals aged 65 years or more equals 18.1% for EU-27, and it equals 14.9% for men and 20.5% for women. In Croatia, the percentage of people at risk of poverty for 65+ population equals 32.8%, and the difference regarding gender is even more pronounced for this group. Namely, it amounts to 28% for men and 36% for women in 2016.

Furthermore, according to data from Croatian Bureau of Statistics (2018), the percentage share of the population older than 50 years to total population is increasing since 1911 and in 2017 it amounted to 41.53%. Thus, Croatia is considered an old country with the mentioned percentage among highest in already ageing Europe. Moreover, various future projections point to the even higher share of the older population, what is related to potentially unfavourable living conditions for 50+ population in Croatia (Murgić et al., 2009). Furthermore, a decrease in the number of young people and a steep rise of the ageing population are depopulation trends that have determined the population fluctuations in Croatia (Wertheimer-Baletić, 2004).

Also, in many developed regions over the world an increasing old-age dependency ratio, which is defined as ratio between the number of persons aged 65 and over and the number of persons aged between 15 and 64 (expressed per 100 persons of working age 15 – 64), can be noticed. According to Eurostat, old age dependency ratio in 2016 amounted 39.3% for EU-28 and 30.0% for Croatia. The old age dependency ratio in Croatia is projected to reach 52.3% in 2050, which points to one senior per two employed persons (Puljiz, 2016).

According to the OECD data, the ratio between active workers and pensioners is 1.2 to 1. In spite of the fact that this can be observed in most comparable European countries, it does not provide any comfort but points to the seriousness of the problems at the level of Europe as a whole. Due to a continuous deterioration of the ratio between active workers and pensioners, it is hard for the Croatian retirement system to fulfil its fundamental role in providing social security in case of ageing, disability and death of the family head. Replacement rates (pension to wage ratios) in the observed countries, which are useful in the context of social policy, leave no room for optimism. Namely, the net salaries of Croatian citizens are halved in retirement, placing Croatia in the midst of the European countries (Nestić and Tomić, 2012). Accordingly, the proportion of the average pension in the average wages dropped from 75.3% in 1990 to 38.8% in 2017.

These figures underline the fact that the average propensity to consume is higher for retirees than for employees for 50+ population. Since retirement income makes less than a half of the average wage, retired persons within the „50+" age group spend the full amount of their pensions or greater its part to meet basic human needs (for example, food and health services). A similar situation is characteristic for selected European Union New Member States (NMS) what is presented in Figure 1.

F i g u r e 1

Individual Income for Selected European Union New Member States (NMS) in 2014
(in euro)
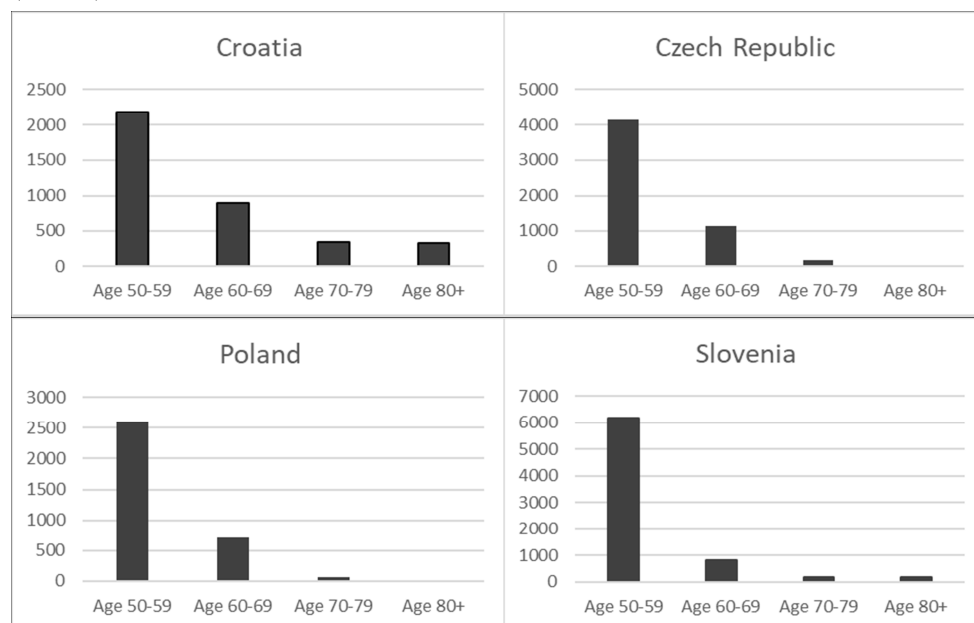
Source: Global Aging Data (2018).

Retirement income in Croatia is in most cases very low and the current pension system is unsustainable in the long-run. Accordingly, it is very likely that future pensions from the first and second pillars of nowadays employees will also be very low. Apart from the mentioned demographic changes and the problems of the Croatian pension system, pensioners' life costs are also increasing due to higher life expectancy (Barbić, Palić and Bahovec, 2016).

Furthermore, pension systems are becoming more complex, with public pension systems no longer able to guarantee generous pensions, private savings and personal responsibility of individuals become increasingly important for the appropriately funded living standards in the 65+ population (Zaidi, 2010).

Accordingly, Vehovec (2012) suggests the framework of applying financial and retirement literacy models in Croatia. The expansion of retirement literacy or retirement education is necessary for future retirees in order to gain knowledge on the benefits and disadvantages of obligatory retirement insurance in time. Each pension system, including the pension system in Croatia, is long-term, and is generally complex and subject to policy-driven changes. Retirees need to know how it works, to adjust their life plans in a timely manner and better manage their personal or family finances in the long-run. Retirements from a compulsory pension insurance system have limitations with whom users have to become familiar. The life standard for ageing population depends on total income, not necessarily on pensions. It is therefore important to know that there are opportunities for additional income in old age and that these opportunities should be available and well-known (Vehovec, 2012).

2. Literature Review

Although the path of lifetime consumption has been the important subject of economic research for decades, the consensus regarding the consumption function of ageing population has not yet been reached. On the one hand, Lührmann (2010), analyses consumption before and after retirement in Germany and points to the recognizable decrease in consumption after retirement what is in line with empirical „retirement-consumption puzzle" explained by Banks, Blundell and Tanner (1998) who have empirically shown that consumption decreases sharply after retirement. Moreover, along with Banks, Blundell and Tanner (1998) and Lührmann (2010), life-cycle model has been confronted to empirics by Bernheim, Skinner and Weinberg (2001), Miniaci, Monfardini and Weber (2003), Smith (2004), Hurd and Rohwedder (2005), Aguiar and Hurst (2005) and Laitner and Silverman (2005). According to Hurd and Rohwedder (2005) the life-cycle model is not empirically plausible in the United States and Great Britain, because

consumption drops after retirement. The mentioned research showed that individuals are not forward looking as life-cycle theory predicts and are not well prepared to decrease in available resources. The research of Miniaci, Monfardini and Weber (2003) also indicates that consumption changes with retirement. Namely, consumption related to work (such as expenses for transport, meals and business clothing) decreases, while individuals engage in so-called „home production" of services, for instance, cooking, house-cleaning etc. However, they suggest that non-durable consumption does not decrease unexpectedly due to lump sum payment received by new retirees in Italy as well as intergenerational connections.

On the other hand, Aguila, Attanasio and Meghi (2011) use data from 1998 to 2000 in United States and point to the conclusion that retirement-consumption puzzle is not evidenced, since consumption approximated by nondurable consumption, as opposed to food consumption which is often used as a proxy for consumption, does not change with retirement. As for food consumption, their results show it decreases with retirement, what is in line with previous empirical research of Bernheim, Skinner and Weinberg (2001), Aguiar and Hurst (2005), Hurd and Rohwedder (2005). Regarding the retirement-consumption puzzle and the empirical validity of the life-cycle model, Browning and Crossley (2001) point to disparate wealth levels among individuals and remark that wealth of households at the moment of reaching retirement is often insufficient to preserve their pre-retirement living standards.

Taking into consideration the previous research which uses SHARE data in analysing the consumption of 50+ population, it is important to mention research of Bíró (2013) which used data from first two waves of SHARE to assess the empirical plausibility of the life-cycle model with mortality risk indicating that increase in life expectancy affects consumption behaviour at the older age. The author concludes that consumption of 50+ population changes after a subjective mortality shock, whereat death of the sibling is used as the instrumental variable.

Regarding previous research of consumption behaviour in Croatia, Jurčić and Čeh Časni (2016) analyse the structure of personal consumption in Croatia and compare it with the fluctuations in personal consumption of EU-27. Moreover, Dumičić, Čeh Časni and Palić (2013) assess the determinants of household consumption using macroeconomic data using estimate error correction model and outline that net real wages, real estate prices and credits to consumers are significant in explaining personal consumption. In Dumičić and Čibarić (2010), authors analyse the determinants of household savings in Croatia using cointegration approach and error correction modelling and indicate that income, interest rate, money supply, external debt and credits to consumers are statistically significant

in explaining saving behaviour in Croatia. However, the research of consumption determinants of the older population using survey data is not available in Croatia. Moreover, besides using SHARE data to assess consumption determinants, this research fills the gap in the existing literature by exploring the impact of socio-economic factors on the consumption of individuals older than 50 years in Croatia.

3. Data Description and Methodology

Dataset used in this research consists of secondary data from the Survey of Health, Ageing, and Retirement in Europe – SHARE (SHARE, 2017). Since we want to estimate household consumption of 50+ population in Croatia, we use the data from wave 6, for the year 2015 when Croatia entered SHARE. Namely, prior to 2015 Croatia did not participate in SHARE. Additionally, it is important to emphasize that the SHARE target population consists of all persons aged 50 years and over at the time of sampling who have their regular domicile in the respective SHARE country (SHARE, 2017). Accordingly, we analyse the impact of socio-economic factors on consumption of individuals older than 50 years in Croatia.

For the purpose of the empirical analysis, we used the following variables: total household consumption, household total income, total household wealth, total non-housing wealth, household size, years of education, and we controlled for gender, marital status and labour status.

According to SHARE codebook (SHARE, 2017) total household consumption represents the total typical monthly amount spent by the household in the country's local currency (Croatian kuna, in our case). The household respondent is asked the following question: „Thinking about the last 12 months: about how much did your household spend in a typical month on all goods and services, including groceries, eating out, telephone and everything else?" Household total income is the sum of all income, before any taxes and contributions, at the couple-level economic unit (the respondent and spouse, if any). Total household wealth is the net value of total wealth at the household-level (all respondents in the household). The net value of total wealth is calculated as the sum of all wealth components minus the value of all debts. The total non-housing wealth is given at the couple-level economic unit (the respondent and spouse, if any). The net value of all non-housing wealth is calculated as the sum of the appropriate wealth components less debt. All wealth measures are denominated in nominal Euros. Household size counts the number of people living in the household, including the respondents. Years of education is the number of years of education.

Since we want to assess whether the household consumption of 50+ population in Croatia is affected by gender, marital status or labour status, in the empirical analysis we estimate separate regressions for the aforementioned groups of respondents.

The distribution of respondents is equally represented by both genders (proportion of men and women is 0.5). Based on the marital status, the leading group are married respondents (proportion of married people in the sample is 0.75), followed by widowed (with the proportion of 0.15), remaining 10% is dispersed between partnered, separated, divorced and never married respondents. Educational background of respondents is skewed towards those with lower secondary education (42.8%), followed by respondents with upper secondary education (25.6%). The proportion of respondents with no education and those with the first stage of tertiary education is virtually identical (15.8% vs. 15.6%, respectively). In terms of occupation, most respondents are retired (59.06%), followed by employed or self-employed of 20.6%.

4. Empirical Analysis and Discussion

Generally, income, consumption and wealth are considered as good indicators of the material well-being. Thus, the starting point of our analysis[1] is exploring the percentile shares of total household income, household total consumption and total household wealth.[2]

Apparently, the top 20% of the surveyed respondents get 51.82% of total household income, while the bottom 20% get only 1.47% of total household income. Furthermore, top 20% of the respondents get 60.1% of total household consumption, while the bottom 20% get only 4.7% of total household consumption. Finally, top 20% of the surveyed respondents get 62.8% of total household wealth, while the bottom 20% get only 0.8% of total household wealth.

If we divide the respondents in the bottom 50%, mid 40% and top 10%, we could observe the percentiles of total household income and total household wealth as shown in Figure 2.

Thus, Figure 2 shows that top 10% of respondents have 45.7% of total household wealth and 34.8% of total household income, which indicates that income is less unequal distributed than wealth. If we look at total household income of 50+ population as shown in Figure 3, we can notice that income distribution is skewed, suggesting substantial income inequality.

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[1] All the empirical analysis in this paper is performed in Stata 14 statistical software.

[2] For the purpose of this analysis we have used new Stata command for computing and graphing percentile shares. For more details please see: Jann (2015).

Figure 2

Distribution of Total Household Income and Total Household Wealth (whole sample)
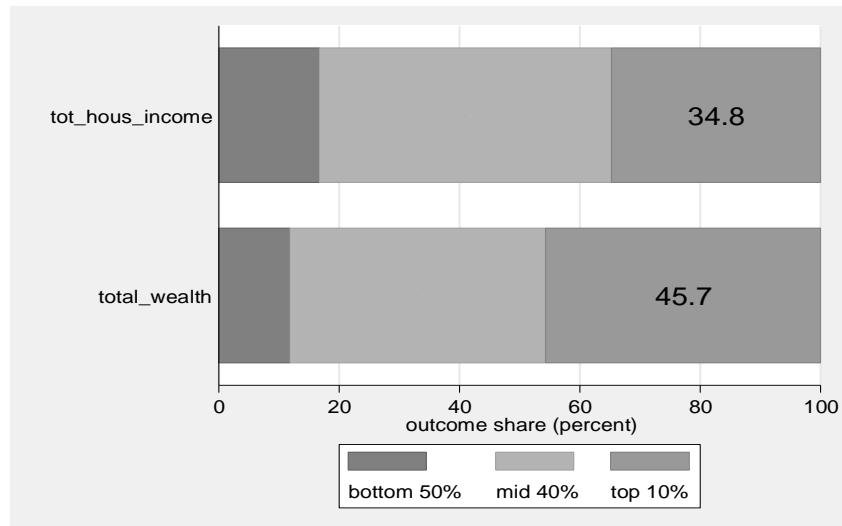
Source: Authors' calculations (based on SHARE wave 6).

Figure 3

Distribution of Total Household Income of „50+" Population
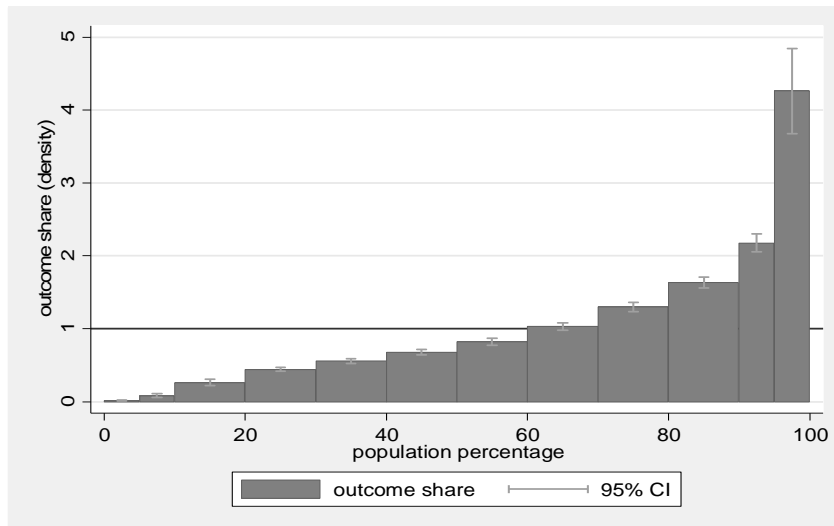
Source: Authors' calculations (based on SHARE wave 6).

Also, if we analyse total household wealth by income group, we can notice that top income households are also the ones among which most of the wealth is accumulated, what is shown in Figure 4.
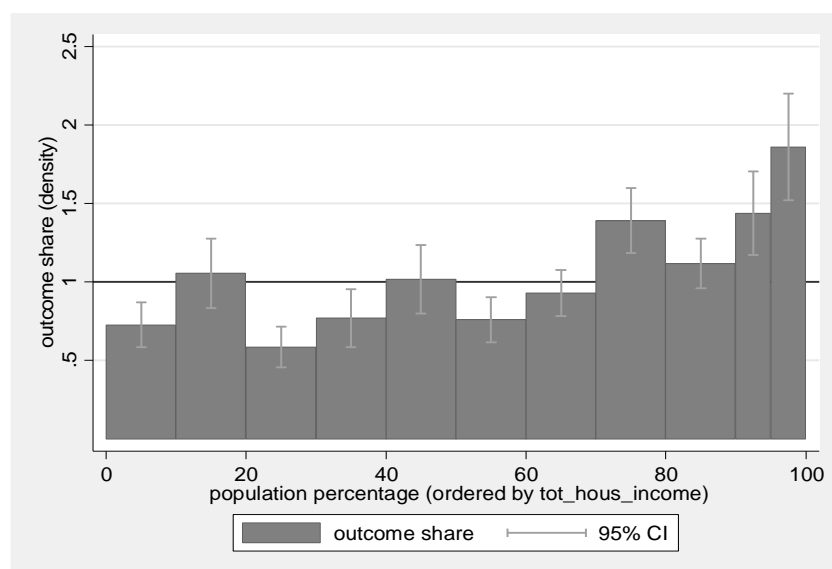
Figure 4

Distribution of Total Household Wealth by Income Group

Source: Authors' calculations (based on SHARE wave 6).

Having in mind substantial consumption, income and wealth inequality of „50+" population in Croatia, according to SHARE database in 2015 (wave 6) and taking into consideration that is no consensus in the existing literature whether the elasticity of consumption to changes in household income should be higher or lower for the retired individuals, this research tests this assumption empirically.

Ever since the research of Modigliani and Brumberg (1954), the life-cycle hypothesis has been the essential for analysing consumption and saving behaviours. Older people usually have shorter life spans, tend to save less and to spend more in comparison to younger people. Alternatively, the ageing population may have experienced a decrease in income with the pension being the main source of money income, therefore facing the decision of money allocation during the late period of their life.[3]

In this study, the dependent variable, total household consumption, was recalculated into logarithms in order to capture existing nonlinear relationships between the dependent variable and analysed independent variables (Abdel-Ghany

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[3] According to the life-cycle hypothesis, consumption may vary with time, but it is not directly related to transitory fluctuations of income. To maximize satisfaction, households may borrow during the early period of their life to preserve a high level of consumption, and accumulate wealth during the middle age, borrow from savings to correct for the decreased income for the period of retirement (Mok, Wang and Hanna, 1994).

and Schwenk, 1993). For the purpose of the empirical analysis, data on respondents surveyed by SHARE (Wave 6), living in Croatia in 2015, aged 50 and older were used. Given these restrictions, the sample size is 1461 respondents.[4]

The independent variables used in the estimation comprise one income variable, namely household total income (which is for the purpose of the analysis recalculated into natural logarithms). Two wealth variables: total household wealth and total non-housing wealth[5] (both recalculated in natural logarithms). For the variables that are expressed in logarithmic values, the estimated coefficients can be interpreted as the elasticity of consumption to changes of those individual regressors. Additionally, the model encompasses socio-demographic variables, i.e. household size, years of education, gender, marital status and labour status.

The baseline model in this study is the inverse-log regression model, with the dependent variable specified as the natural logarithm of total household consumption. Written as an equation, we can describe the model of household consumption[6] of 50+ population in Croatia as:

$$
\ln\left(hh_{consump}\right) = \beta_0 + \beta_1 * years_{education} + \beta_2 * \ln\left(tot_{hous_{income}}\right) + \beta_3 *
$$
$$
\ln\left(tot_{wealth}\right) + \beta_4 * \ln\left(tot_{non_{wealth}}\right) + \beta_5 * hh_{size}
$$

$$(1)$$

The coefficients and significance levels of the baseline regression model are shown in Table 1.

Total household consumption was statistically significant and positively related to all the independent variables. According to the estimated regression model, household size has the largest impact on total household consumption, with the coefficient being 0.17. Furthermore, for every additional year of education, holding all other variables constant, the household consumption would rise for 0.03%. The elasticity of household consumption to changes in total wealth is 0.034, which is higher than the elasticity of household consumption to changes in total non-housing wealth with a coefficient of 0.017. Finally, the elasticity of household consumption to changes in total household income is 0.047.

Moreover, in our empirical analysis, we explored the impact of labour status on total household consumption. Given the fact that, in terms of occupation,

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[4] We did not adjust the weights used to expand the sample to represent the entire Croatian population.

[5] Since the portion of housing wealth in total wealth is substantially large for our sample, in the model we have used two wealth variables.

[6] The analysis was performed using Ordinary Least Suares (OLS) method. This cross-section model of household consumption passed all the relevant statistical diagnostic tests which are not reported, but are available from the authors upon the request.

most respondents were retired or employed/self-employed (percentage in our sample were 59.06% vs 20.6%, respectively), we estimated the regression model of consumption for those two groups of respondents. Namely, the regression model given by Equation (1) was estimated for two groups of respondents: employed and retired. Results are presented in Table 2.

Table 1

Regression Results of Baseline Model of Total Household Consumption of 50+ Population in Croatia

Independent variables	Dependent variable Ln (total household consumption)
Years of education	0.032*** (0.006)
Ln (Total household income)	0.047*** (0.016)
Ln (Total wealth)	0.034*** (0.009)
Ln (Total non-housing wealth)	0.017*** (0.004)
Household size	0.171*** (0.014)
Constant	4.109*** (0.155)
Adjusted R^2	0.1823
Number of observations	1,461

Note: Estimation is performed using OLS, equation includes a constant term; standard errors are given in brackets; *** denotes significance at 1% significance level

Source: Authors' calculations (based on SHARE wave 6).

Table 2

Total Household Consumption of 50+ Population in Croatia According to Labour Status: Employed vs. Retired

Independent variables	Employed or self-employed	Retired
Years of education	0.033** (0.013)	0.034*** (0.008)
Ln (Total household income)	0.037* (0.019)	0.068** (0.026)
Ln (Total wealth)	0.069*** (0.024)	0.024** (0.012)
Ln (Total non-housing wealth)	0.029 *** (0.011)	0.016*** (0.005)
Household size	0.082*** (0.024)	0.173*** (0.019)
Constant	3.984*** (0.318)	4.018*** (0.239)
Adjusted R^2	0.1402	0.1521
Number of observations	308	915

Note: Estimation is performed using OLS for separate groups of respondents by labour status, each equation includes a constant term; standard errors are in given brackets; ***, **, * denote significance at 1%, 5% and 10% significance level, respectively.

Source: Authors' calculations (based on SHARE wave 6).

Interestingly, the elasticity of household consumption to total household income in the case of employed respondents was 0.037, but the coefficient was statistically significant only at 10% significance level. In the case of retired respondents, the elasticity of household consumption to total household income had a larger coefficient of 0.068, which was statistically significant on 5% significance level. It seems that for a 1% rise in total household income of the retired, the total household consumption would rise for 0.068%, compared to a rise in household consumption of 0.037% in the case of employed. It appears that retired people have larger marginal propensity to consume than employed. Namely, the respondents who have experienced a decrease in income with the pension being the main source of their money income, spent relatively more of their pension, then do employed people out of their salary.

The impact of total wealth on household consumption was more pronounced in the case of employed respondents when compared to retired respondents (the elasticity of household consumption to changes in total wealth was 0.069 for employed and 0.024 in the case of retired respondents). The same is evident for total non-housing wealth. Namely, the elasticity of household consumption to changes in total non-housing wealth is 0.029 vs 0.016 in the case of employed and retired respondents, respectively. This finding may be due to the fact that wealth is a less liquid asset, so it cannot be converted into money easily. That may be the reason why the marginal propensity to consume out of wealth is higher for employed respondents compared to the retired group.

Household size affects retired respondents more, when compared to employed group, with the coefficients being 0.173 and 0.082, respectively (in both cases the coefficients are statistically significant on 1% significance level). This finding is logical, if we assume that retired finance their consumption out of their retirement pension, so household size has a relatively stronger impact on the total consumption when compared to the employed group. Considering years of education, in both observed groups coefficients are fairly the same, being 0.033 and statistically significant on 1% significance level.

In Table 3 the results of regression analysis controlled for marital status are shown. Namely, we wanted to perceive whether the marital status has a significant impact on household consumption of 50+ population in Croatia, so we run a regression for the married respondents and for widowed respondents since those were the leading groups based on the marital status (75% vs 15%, respectively).

According to the presented results, the elasticity of household consumption to total household income in the case of married respondents is 0.03, but the coefficient is statistically significant on 10% significance level. In the case of widowed

respondents, total household income has no statistically significant impact on household consumption. In addition, the elasticity of household consumption to total wealth is 0.06 in the case of married respondents, while it has no statistically significant impact on household consumption in the case of widowed respondents.

However, the elasticity of household consumption to total non-housing wealth has a higher coefficient in the case of widowed respondents when compared to married group (0.017 vs. 0.010). Household size has a higher impact on household consumption for the group of widowed respondents, while years of education have a higher impact on household consumption in the case of married respondents. Finally, we wanted to explore how gender affects the household consumption of 50+ population in Croatia. The results of the analysis are presented in Table 4.

T a b l e 3

Total Household Consumption of 50+ Population in Croatia According to Marital Status: Married vs. Widowed

Independent variables	Married	Widowed
Years of education	0.030*** (0.007)	0.024* (0.013)
Ln (Total household income)	0.032* (0.018)	0.050 (0.059)
Ln (Total wealth)	0.061*** (0.013)	0.011 (0.013)
Ln (Total non-housing wealth)	0.010* (0.005)	0.017** (0.008)
Household size	0.131*** (0.016)	0.243*** (0.035)
Constant	4.146*** (0.197)	4.123*** (0.485)
Adjusted R^2	0.1175	0.2821
Number of observations	1 196	171

Note: Estimation is performed using OLS for separate groups of respondents by marital status, each equation includes a constant term; standard errors are in brackets; ***, **, * denote significance at 1%, 5% and 10% significance level, respectively.

Source: Authors' calculations (based on SHARE wave 6).

Considering two wealth variables: total household wealth and total non-housing wealth, we can notice that in the case of male respondents' consumption is more responsive to changes in total wealth, while in case of female respondents the same conclusion can be reached for total non-housing wealth. Interestingly, in both groups, total household income has no statistically significant impact on household consumption. Household size and years of education are statistically significant with a similar coefficient in magnitude for male and female respondents.

T a b l e 4

Total Household Consumption of 50+ Population in Croatia According to Gender

Independent variables	Male	Female
Years of education	0.031*** (0.009)	0.032*** (0.010)
Ln (Total household income)	0.033 (0.026)	0.027 (0.025)
Ln (Total wealth)	0.063*** (0.018)	0.059*** (0.018)
Ln (Total non-housing wealth)	0.011 (0.008)	0.013* (0.007)
Household size	0.132*** (0.025)	0.130*** (0.023)
Constant	4.125*** (0.287)	4.176*** (0.279)
Adjusted R^2	0.1143	0.1143
Number of observations	588	607

Note: Estimation is performed using OLS for separate groups of respondents by gender, each equation includes a constant term; standard errors are in brackets; ***, **, * denote significance at 1%, 5% and 10% significance level, respectively.

Source: Authors' calculations (based on SHARE wave 6).

Concluding Remarks

In an ageing country such as Croatia, it is crucial for economic policy makers to recognize and analyse the determinants of consumption of the 50+ population. Therefore, in this study, the basic features of consumption of the population in Croatia were explored. The baseline model in our study was the inverse-log regression model, with the dependent variable specified as the natural logarithm of total household consumption. The dependent variable was statistically significant and positively related to all the independent variables, with the elasticity of household consumption to changes in total household income of 0.047. With the aim of exploring whether total household consumption performed differently according to labour status, marital status or gender, we estimated separate regressions for those groups of respondents. The most interesting result was found in the case of the regression model of total household consumption controlled for labour status. Namely, the marginal propensity to consume out of total household income was higher for the retired (0.068) than for the employed (0.037), which is in line with the life-cycle theory. Accordingly, the 50+ population who have experienced a decrease in income with the pension being the main source of their money income, spent a relatively higher proportion of their pension, then do employed people out of their salary. Also, this could be explained by the fact that retired individuals who are not so wealthy, will have a higher marginal propensity to consume, compared to wealthier (employed) individuals.

Even though, according to authors' knowledge, this is the first study of household consumption of 50+ population in Croatia based on SHARE data, there are some limitations. Firstly, a limitation of the presented study is its cross--sectional nature. Also, the regression results from baseline model and models controlled for labour status, marital status and gender, provide average marginal propensity to consume for the entire wealth distribution. However, given the concentration of wealth (in top 10% of respondents), these average estimates are likely to be affected by heterogeneity in consumption and savings behaviour. Taking all this into account, in further studies, consumption of 50+ population might be explored taking into consideration wealth and income percentiles, since consumption response of rich people might play a key role in overall wealth effect on consumption. Also, additional exploratory variables might be added in the baseline model.

This study provides some policy implications. Since household consumption is the largest component of aggregate consumption having the largest share in the gross domestic product, there is a need to thoroughly study the fluctuations in personal consumption with the aim of creating and implementing an economic and social policy of a country. Moreover, it is crucial for economic policy makers to recognize the need for stable economic environment, demographic changes and more sustainable pension system in order to assure better economic conditions for the ageing population and prevent intergenerational conflicts.

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