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Abstract

Our study contributes to the discussion about the extent of the phenomenon of the ‘income-poor, asset-rich’ elderly households, which can be associated with high homeownership rate in this group. However, we do not limit our analyses to this single category where low income is paired with high wealth, but rather explore the distribution of elderly households in terms of combinations of different levels of income and wealth. This way we shed some light on the existing patterns with reference to this distribution. This study focuses on the significance of homeownership and its impact on the welfare position of the elderly relative to the total population. We employ microdata from the Luxembourg Wealth Study Dataset (LWS) for 12 European countries. The results of the empirical research allow to draw some conclusions. First, ‘income-poor, asset-rich’ elderly households are a quite marginal category. Second, in the case of most countries studied, higher homeownership rates among elderly households, as compared to non-elderly households, are not accompanied by proportionally greater household wealth, even though the non-elderly are additionally burdened by the mortgage debt. However, we also find some evidence that homeownership is positively associated with the welfare position of the elderly.

Keywords

housing, comparative studies, wealth, elderly poverty, Luxembourg Wealth Study

Introduction

Recent decades have seen a substantial evolution of pension systems in developed countries. The reforms can generally be identified with a broader process of the welfare state retrenchment and attributed to the ongoing unfavourable demographic and socio-economic changes. Population ageing heavily burdens the public pension finance and threatens pension system sustainability in economic and financial terms, forcing a reduction in pension benefit adequacy (OECD, 2013). This leads to increased concerns about the economic well-being of the elderly, with the role of individual precaution becoming more noticeable at the same time. In this context, it is worth considering the importance of housing wealth, and more precisely, a residential real estate whose possession may provide additional income in cash or in kind after retirement. When replacement rates from public pension systems decrease, individuals are motivated to accumulate wealth for retirement using various options available in the market and supplied by the private sector, which also includes housing equity. This is often facilitated or even fostered by the state policy aimed at favouring homeownership over tenancy (Christophers, 2021). The superiority of wealth accumulation over income and social transfers has been justified on the theoretical ground by Sherraden (1991) who proposed the concept of “asset-based welfare” (ABW). The original ABW theory neglects the central role of housing as an asset category, which has provoked a lot of criticism. Therefore, it was later developed further, evolving into

the housing asset-based welfare (HABW) concept (Prabhakar, 2019), based on which housing itself can serve as a pension. Increasing homeownership rates have also opened new perspectives to combine pensions and housing assets.

An owned home is a special non-financial asset used to accumulate wealth for retirement as it can be both a consumption and investment commodity. In the case of the former, homeownership may reduce the living costs of housing as compared to rented dwellings (the concept of imputed rent). In the case of the latter, residential real estate may be a source of the return on capital invested in its acquisition. The statistics for developed countries reveal that irrespective of the country, homeownership is more common among older people than among those aged 45 or less, and additionally, with reference to the elderly population, homeownership rates are quite evenly distributed in all the income deciles (OECD, 2013). Thus, own home may be perceived as an asset accumulated over one's lifecycle. However, as many studies demonstrate, older homeowners are commonly quite reluctant to make use of housing equity they own in such forms of housing wealth decumulation as reversed mortgage or downsizing (for a review, see Romiti and Rossi, 2012).

The combination of both high homeownership and declining levels of pension replacement rates raise the question about the resulting welfare consequences for the elderly. Our study contributes to the discussion about the extent of the phenomenon of the 'income-poor, asset-rich' elderly households and their characteristics in the context of poverty risk (Bradbury, 2010; Doling and Elsinga, 2013; Forrest, 2008; Gornick et al., 2009; Sykes, 2003). However, unlike in the previous literature, we do not limit our analyses to this single category where low income is paired with high wealth, but rather explore the distribution of elderly households in terms of combinations of different levels of income and wealth. This way we shed some light on the existing patterns with reference to this distribution. Additionally, we evaluate how homeownership specifically impacts the welfare position of the elderly relative to the total population. The problem is vital in the context of public policy and the government decisions on whether to pursue extensive homeownership policies and support tenure as a dominant form of housing to relieve public pension systems in ensuring income adequacy.

Our empirical research comprises a cross-country comparative study conducted for 12 European countries. We employ microdata from the Luxembourg Wealth Study Dataset (LWS), which delivers harmonised information about wealth and income. As indicated by Gornick et al. (2009), LWS is one of the relatively few methodological conventions associated with comprehensive wealth measurement which meets cross-country comparability requirements. By using recent data for the 2016-2017 period, we provide an up-to-date outlook with reference to the income-wealth patterns among elderly households. The analyses are conducted at both the aggregated country level and the individual level using multinomial logistic regression.

The remainder of the paper is as follows. First, it refers to the previous literature to discuss the relationship between homeownership and the welfare of the elderly. Second, it introduces our empirical approach associated with the measurement of the elderly's welfare position. Subsequently, it presents the results of the empirical investigation. The paper ends with synthetic conclusions.

Related literature

The traditional model of wealth accumulation by a household is based on the life-cycle hypothesis (LCH) (Blake, 2006). Developed by Ando and Modigliani (1963) and Modigliani and Brumberg (1954), LCH is based on the rational expectations hypothesis based on which an agent accumulates wealth to consume after retirement. This allows it to postpone current consumption for the future when labour

income is no longer received, smoothing consumption across the entire lifecycle. In line with this theory, the maximum asset accumulation level is obtained at the moment of retirement. Afterwards, the wealth decumulation phase starts for consumption purposes. Thus, an agent's or a household's wealth (resource) is systematically transformed into income (stream). LCM has undergone extensive empirical verification which has revealed the divergence between the theory and practice (Bernheim et al., 2001; Browning and Crossley, 2001; Campbell and Mankiw, 1989; Carroll and Summers, 1991; Parker, 1999; Shapiro and Slemrod, 1995). It can be related to the scale of consumption smoothing, which is also addressed by Campbell and Deaton (1989) and is often referred to as the Deaton paradox. Nevertheless, depending on the public pension system model and its generosity, agents are motivated to save privately at various scales to replace the income from the labour or at least to protect themselves from poverty. They accumulate assets and homeownership is one of the available options in this regard. That is why LCM is often referred to as a suitable theoretical framework for the consideration of home purchasing as a substitute for monetary savings for retirement (Schmidt-Hebbel and Serven, 1997). Naturally, housing equity in the form of one's own residence and other long-term assets can be accumulated in a complimentary manner.

The often referenced Kemeny's Thesis (Kemeny, 1981) suggests the substitution of homeownership rates and social welfare at a country level. Countries with reduced welfare systems (in a sense of commodification of social provision) are characterised by higher homeownership rates. Kemeny supports his theory with some preliminary results of empirical studies. Castles (1998) verifies Kemeny's Thesis using a larger dataset with emphasis put on the impact homeownership has on the elderly's welfare. His study is referenced in the literature as the 'Big Trade-off Hypothesis'. Kemeny's and Castle's research, which contributed noticeably to the literature on the homeownership-pension nexus, suggests that higher homeownership rates may translate into adequate income after retirement alongside a reduced public pension system.

There are several previous studies that—using macro- and micro-level data—draw on the theoretical concepts of the 'Big Trade-off Hypothesis' and ABW to empirically answer the question of whether homeownership contributes to poverty reduction in the elderly population. Studies employing macro-level data do not deliver an unambiguous answer to the question about the relationship between owning a home and poverty reduction among the elderly (for a review, see Bravo et al., 2019; Doling and Ronald, 2010). The reason behind these inconclusive results is the sensitivity of the phenomenon under study to country-specific factors as well as pension and housing systems. That is why micro-level data are more useful in the evaluation of the role played by housing assets in the reduction of poverty risk. Most previous studies based on micro-level data deliver some empirical arguments in favour of a positive answer to the above question yet doubts remain. Dewilde and Raeymaeckers (2008) use European Community Household Panel (ECHP) survey data for ten European countries to demonstrate some poverty reduction outcomes of homeownership at a micro-level. However, this effect weakens as the homeownership rate increases. An important advantage of their study over previous ones is the inclusion of housing social provision '*as an important policy alternative to the encouragement of homeownership*'. Due to such an approach, they find that generous pensions or high homeownership rates have a weaker impact on poverty reduction than the provision of social housing for the elderly. Nonetheless, based on EU-SILC micro-level data for 25 European countries, Borg (2015) finds that elderly homeowners are at a lower risk of poverty when it is measured by housing deprivation. Doling and Elsinga (2013) use two income adequacy dimensions—maintaining living standard and poverty risk reduction—to test whether these two categories are affected by homeownership. The models estimated using EU-SILC macro- and micro-level data for 25 EU member states predict that although the results are not uniform across all the countries, housing income, both in cash and in kind, could contribute noticeably to older people maintaining their previous living standard. The models also

predict housing income to be a potential factor of poverty reduction. Doling and Elsinga (2013) find housing assets not to be an effective mechanism used to diminish inequality across income groups. However, such assets have the potential to smooth income (and therefore also consumption) over the lifecycle.

A somewhat different approach to poverty evaluation is employed by Watson and Webb (2009). Contrary to other studies, which focus on the measurement of relative or absolute poverty, they investigate the nexus between homeownership and subjective poverty perception instead of its objective measure. The analysis of ECHP data for 11 European countries (waves 1994-1996) does not make it possible to question the view that European homeowners are less likely to subjectively perceive themselves as poor. On the other hand, Watson and Webb do not find arguments to support the view that homeownership is more valued in countries characterised by higher owner-occupancy rates. However, empirical evidence supports the finding that countries with higher income inequality use homeownership as a tool of security. Further conceptual developments in this vein of literature include such things as the inclusion of imputed rent. One example in this regard is a study by Frick et al. (2010) covering five European countries. They used data collected in the series of national reports addressing the distributional effects of imputed rents and demonstrate that this kind of income contributes to the reduction of income inequality and poverty.

Most of the empirical studies exploring the impact of housing on poverty, construed as an insufficient income to maintain the standard of living, focus on the role of homeownership but not housing wealth. Owning a home naturally implies that an individual holds a certain amount of housing assets. However, whereas homeownership is a binary category, housing wealth is expressed as a quantity, which is more complex information. Homeownership does not account for the magnitude of housing wealth affected by the value of the principal residence, but also by other real estate owned by a household. Information about homeownership does not include data about such things as secondary real estate property which, depending on the country, can be quite widespread as demonstrated by Wind et al. (2020) based on the statistical data for the European countries. The linkage between homeownership and total household wealth is very complex and still unexplored; nonetheless, real estate assets in the form of one's own residence are the key component of household assets (Arrondel et al., 2016; Causa et al., 2019; Cowell et al., 2017), and homeownership rates explain to a great extent the differences in wealth accumulation between countries (Mathä et al., 2017). However, a mass homeownership policy may result in an actual increase in wealth inequalities (Arrondel, 2017; Christophers, 2021). Additionally, some studies conducted for the United States to investigate the relationship between homeownership duration and the accumulation of household wealth prove a positive relationship between them (Davidoff, 2012; Di et al., 2007).

Empirical framework

The data employed in our empirical analysis includes the Luxembourg Wealth Study (LWS) dataset. The LWS is a cross-national household survey that collects data meeting the requirement of cross-country comparability and delivering information on household wealth and its composition, incomes of various kinds, as well as consumption expenditures. We examine data from the 10th wave of the survey, which covers the 2016-2017 period. The following countries are investigated: Austria, Germany, Estonia, Spain, Finland, Greece, Italy, Luxembourg, Norway, Slovakia, Slovenia, the United Kingdom.

For all empirical analyses, we use weighted data. The weights are assigned by the data producer in such a way as to ensure the representativeness of the total country household population, and at the

same time, to normalise each country's population size to 10,000. As a result, the analyses which involve cross-country comparisons are not biased either by large differences in country populations or by disproportionate sample sizes (ranging from 1,600 households for Luxembourg to 244,000 for Norway).

The main subject of our interest in the study is elderly households. In our approach, we refer to the common definition of the elderly as those aged 65 and up, which also corresponds to the statutory pensionable age in most European countries (Eurostat, 2020). In the variable operationalisation procedure, we identify elderly households with households where the number of members aged 65 and over is equal to the total number of household members. This way we focus on households composed solely of elderly people and exclude households where an older generation cohabitates with a younger one. Such an approach results from the structure of income and wealth statistics, which are given as aggregates for a household. To make our study more comprehensive, in the preliminary analysis, we compare elderly households with non-elderly ones. This makes it possible to recognise the situation of the elderly in terms of economic well-being in the intergenerational context.

Our study identifies the household's economic well-being by combining two categories: income and wealth (assets), which is a similar approach to that presented by Gornick et al. (2009). We classify every elderly household into one of nine categories, each accounting for different levels of assets and income. Table 1. presents all possible combinations (categories).

Table 1. Income-asset matrix

Equivalised household income	Disposable net worth			
		< 0.5 Me	0.5 Me – 1.5 Me	> 1.5 Me
	< 0.5 Me	income-poor/asset-poor	income-poor/asset-medium	income-poor/asset-rich
	0.5 Me – 1.5 Me	income-medium/asset-poor	income-medium/asset-medium	income-medium/asset-rich
	> 1.5 Me	income-rich/asset - poor	income-rich/asset-medium	income-rich/asset-rich

Note: Me stands for country-population median for respective variables

The categories are labelled in accordance with the corresponding levels of income and assets. Income is defined as household equivalised income calculated using the standard square root equivalence scale, i.e. as a ratio between household total current income and the square root of the number of people a household is composed of. Income components include labour income, pensions and other social benefits, private transfers, as well as capital income. Assets reflect household disposable net worth defined as the sum of financial assets (excluding pensions), non-financial assets, as well as pension assets and other long-term savings, minus total household liabilities. The value obtained for each elderly household is then compared against the country population median value, i.e. median household equivalised income and median household disposable net worth, which are set for each country independently using LWS data. We employ $0.5 * median$ and $1.5 * median$ as thresholds applied to distinguish between categories and to assign every household to a certain category. The reference to the country population medians makes it possible to position a given elderly household against the whole population, not just other elderly households.

Regarding income statistics, the level corresponding to 50% of the total population median equivalised income is often recognised as the monetary poverty threshold (Förster and D'Ercole, 2012). By analogy,

we apply the same wealth threshold to identify the *asset-poor* category. In line with the asset-based welfare concept and its underlying assumption that accumulated housing wealth has the potential to complement income in old age, we consider poverty as a certain state of economic well-being that is reflected not only by the people's current income but also by the wealth they possess. Focusing only on monetary poverty associated with the current income does not fully reflect the complexity of the individual financial situation, as people in old age can improve their standards of living by consuming accumulated wealth while receiving low income. Therefore, private savings consumption (other than formal pension financial products) or imputed rent—which are disregarded in the current income information—can be also considered as forms of income.

Results

Our empirical analyses have two primary aims. The first is to explore the patterns of income and wealth packages of elderly households. The second is to identify the relationship between homeownership and elderly household economic well-being. The latter is considered in relative terms and defined as the financial situation of a given household reflected by its position in the income-asset matrix (see Table 1). In the first stage of the analysis, we report some sample statistics with reference to household distribution in terms of assets and income categories. Figure 1 presents the share of elderly households falling into each of nine categories, aggregated for the 12 countries studied. The least affluent households, i.e. both income-poor and asset-poor ones, constitute 9% of the total sample size. This share is slightly smaller than the share of the most affluent households in terms of assets and income, which amounts to 10%. *Income-medium/asset-rich* is the largest category, comprising 29% of the sample units. Compared to the situation of non-elderly households, we can roughly conclude that elderly households report a medium income level more frequently (jointly across all asset ranges). Whereas 68% of the elderly receive medium income, the respective level for the non-elderly is 57%. However, there is a relatively greater share of income-poor elderly households and a smaller share of income-rich households as compared to the non-elderly. In terms of assets, the situation is reversed, with fewer asset-poor and more asset-rich elderly households compared to non-elderly ones.

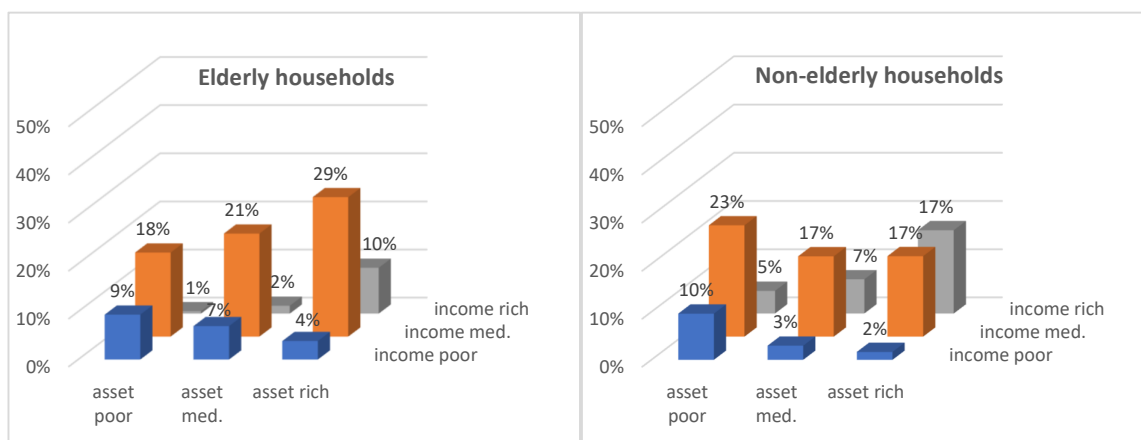


Figure 1. Income and wealth distribution
Source: own calculations based on LWS dataset

When interpreting the aggregated results presented in Figure 1, one should be aware of the existence of considerable country differences. Appendix 1 reports corresponding statistics given independently

for each of the countries studied. The patterns displayed vary to a great extent—in some countries, the distribution is more even while in others it is less uniform. For example, the *income-medium/asset-rich* group strongly predominates among the elderly households in such countries as Finland and Norway (41% and 53%, respectively) while in Estonia the greatest share of elderly households (26%) is *income-poor/asset-poor*. More generally, it can be summarised that one of two categories prevails (to a lesser or greater extent) in almost all the countries except Estonia and Austria, i.e. *income-medium/asset-rich* or *income-medium/asset medium*. These results imply that the country background is very important, and the country-specific patterns should be also accounted for.

Table 2. Country characteristics

	<i>equivalized total income</i>	<i>disposable net worth</i>	<i>real estate assets</i>	<i>homeownership rate [%]</i>	
	$\frac{Mean_{elderly}}{Mean_{non-elderly}}$	$\frac{Mean_{elderly}}{Mean_{non-elderly}}$	$\frac{Mean_{elderly}}{Mean_{non-elderly}}$	<i>elderly</i>	<i>non-elderly</i>
Austria	0.76	0.70	0.78	44	47
Germany	0.68	1.24	1.14	53	42
Estonia	0.41	0.61	0.64	77	75
Spain	0.87	1.57	1.24	82	74
Finland	0.72	1.29	0.99	76	63
Greece	0.84	0.88	0.93	83	69
Italy	0.84	1.10	1.16	76	66
Luxembourg	0.91	1.97	1.43	88	65
Norway	0.80	1.71	1.04	77	64
Slovenia	0.50	0.82	0.93	86	73
Slovakia	0.54	0.63	0.68	86	89
United Kingdom	0.70	1.38	1.16	76	63
Total	0.70	1.34	0.96	74	66

Source: own calculations based on LWS dataset

In line with the above, we present selected country statistics with respect to income and assets. Table 2 reports the ratio between the mean value of *equivalised total income* (given in local currency unit) calculated for the elderly households and the respective value obtained for the non-elderly households. This way we do not refer to the subjective thresholds of $0.5 \cdot median$ and $1.5 \cdot median$ as previously, but rather position elderly households *vis-a-vis* non-elderly households in a more straightforward manner. An analogous ratio is also calculated for the mean absolute *disposable net worth*. A value greater than 1 implies a better economic situation of the elderly relative to the non-elderly. The results obtained allow to conclude that in all the countries studied in terms of *equivalised total income*, elderly households receive smaller income on average, which can be identified mostly with pension benefits. The income disproportion is the greatest in the CEE countries (Estonia, Slovenia, Slovakia) while remaining quite narrow, i.e. below 20%, in such countries as Spain, Greece, Italy and Luxembourg. In the case of the (net) assets owned, measured by *disposable net worth*, the results are more mixed. In Austria, Estonia, Greece, Slovenia and Slovakia, elderly households report smaller (average) total assets than non-elderly households. At the same time, homeownership rates reported for the elderly are greater than those for the non-elderly everywhere except in Austria. In the remaining seven countries, older households can be assessed as wealthier, with the greatest

prevalence reported for Luxembourg and Norway. However, the wealth disproportion between both age groups in these countries is not accompanied by an equal disproportion in homeownership rates. It should be noted that *disposable net worth* accounts for mortgage debt, so the country-specific differences could result from differences in the levels of tenure financialization determined by mortgage market development. Therefore, we also analyse the respective ratio between the mean market value of the real estate owned by the elderly and non-elderly. This indicator does not include mortgage debt. Consequently, if only real estate assets are taken into account, then the situation of the elderly in terms of wealth seems to be closer to that of the non-elderly as compared to the *disposable net worth*, i.e. almost all ratios are closer to unity. Also worth noting is that these values do not fully correspond to the relation between homeownership rates in both groups. For example, an average Estonian and Slovak elderly household owns considerably smaller housing assets than a non-elderly household, even though homeownership rates in both groups are comparable. Similarly, in Greece and Slovenia, homeownership rates are higher for elderly households, but their average housing assets are smaller than in the case of non-elderly households. Therefore, one can conclude that at the aggregated country level, the average higher homeownership rates for the elderly households do not translate directly into greater housing wealth in this group, as compared to the non-elderly households.

To more comprehensively address the issue of the role played by homeownership in explaining the welfare position of the elderly measured by income and assets, we demonstrate the results of multinomial logistic regression modelling. This allows us to shift the perspective from the aggregated country-level to the individual household-level. Additionally, regression analysis is multivariate, which allows to extract the pure effect of homeownership with regard to the household welfare position when controlling for its other characteristics and country differences that may influence this position. The multinomial logit model, as an extension of a binomial logit regression, consists of a series of $n-1$ binomial logit models, where n denotes the number of variants of the dependent nominal variable. Each model corresponds to a different variant of the dependent variable. The omitted variant is a reference category. The parameter estimates are obtained using the maximum likelihood estimation method. As our study focuses on the situation of the elderly, the model is estimated solely for the joint sample consisting of elderly households from 12 countries under investigation. We use weighted data as in the case of the previous analyses.

In our model, the dependent variable is household status with reference to economic well-being, which is equivalent to the household position in the income-assets matrix (see Table 1). This is a nine-category nominal variable, and as such, a total of eight models are estimated. The reference category is the central one, i.e. *medium-income/medium assets*.

Our key explanatory variable is *homeownership*, a binary variable informing whether the household's main residence is owned, regardless of the form (outright or with a mortgage). Additionally, the set of explanatory variables includes information about household characteristics to account for the sample heterogeneity. We control for the age, education, and gender of the household head, as well as distinguish between single and coupled households (*living with a partner* variable). These are typical socio-demographic factors influencing saving behaviour. We do not include monetary income as a predictor as it is already incorporated in the dependent variable. However, a dummy variable *labour income* is covered in the set of explanatory variables to account for households active in the labour market, which—as we expect—positively influences the welfare position of the elderly. A series of country dummy variables is also added to control for country-specific differences.

Table 3. Multinomial logistic regression estimates

	<i>Income-poor/asset-poor</i>			<i>Income-poor/asset-medium</i>			<i>Income-poor/asset-rich</i>			<i>Income-medium/asset-poor</i>		
	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.
Intercept	2.051		0.000	-2.043		0.000	-4.668		0.000	1.244		0.000
age	-0.019	0.981	0.000	0.010	1.010	0.019	0.030	1.030	0.000	0.004	1.004	0.312
gender (1=female)	0.201	1.223	0.003	0.394	1.482	0.000	0.220	1.246	0.006	0.025	1.025	0.640
living with a partner (dummy)	-1.989	0.137	0.000	-1.202	0.301	0.000	-0.664	0.515	0.000	-0.754	0.471	0.000
homeownership (dummy)	-3.826	0.022	0.000	0.598	1.819	0.000	2.159	8.659	0.000	-3.791	0.023	0.000
labour income (dummy)	-1.588	0.204	0.000	-1.879	0.153	0.000	-1.032	0.356	0.000	-0.157	0.855	0.111
education: low	1.509	4.520	0.000	0.632	1.881	0.000	-0.117	0.889	0.275	0.712	2.037	0.000
education: medium	0.156	1.169	0.150	0.010	1.010	0.921	-0.553	0.575	0.000	0.295	1.344	0.001
education: high (ref)												
country: Austria	-0.587	0.556	0.000	-0.745	0.475	0.000	0.070	1.072	0.679	-0.049	0.953	0.703
country: Germany	-0.120	0.887	0.432	-1.237	0.290	0.000	0.132	1.141	0.396	0.037	1.038	0.772
country: Estonia	3.263	26.128	0.000	1.469	4.345	0.000	1.102	3.009	0.000	1.263	3.536	0.000
country: Spain	-1.208	0.299	0.000	-1.632	0.195	0.000	-2.499	0.082	0.000	0.019	1.019	0.888
country: Finland	-0.873	0.418	0.000	-0.750	0.472	0.000	-1.089	0.336	0.000	-0.076	0.926	0.572
country: Greece	-0.549	0.578	0.001	-2.280	0.102	0.000	-4.003	0.018	0.000	0.432	1.541	0.001
country: Italy	-0.332	0.718	0.029	-1.532	0.216	0.000	-2.730	0.065	0.000	0.228	1.256	0.075
country: Luxembourg	-0.064	0.938	0.718	-0.912	0.402	0.000	-2.182	0.113	0.000	-0.417	0.659	0.009
country: Norway	-0.838	0.432	0.000	-0.672	0.511	0.000	-0.307	0.736	0.060	-0.939	0.391	0.000
country: Slovenia	1.506	4.510	0.000	0.118	1.125	0.307	-0.872	0.418	0.000	0.597	1.817	0.000
country: Slovakia	1.237	3.444	0.000	-0.974	0.378	0.000	-3.507	0.030	0.000	0.901	2.463	0.000
country: United Kingdom (ref)												

Table 3. (continued)

	<i>Income-medium/asset-rich</i>			<i>Income-rich/asset-poor</i>			<i>Income-rich/asset-medium</i>			<i>Income-rich/asset-rich</i>		
	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.
Intercept	-1.172		0.000	-2.253		0.049	0.783		0.253	0.847		0.021
age	0.008	1.008	0.011	0.019	1.019	0.175	-0.029	0.971	0.000	-0.023	0.977	0.000
gender (1=female)	-0.037	0.964	0.373	-0.456	0.634	0.016	-0.235	0.791	0.028	-0.325	0.723	0.000
living with a partner (dummy)	0.676	1.965	0.000	-0.834	0.434	0.000	-0.160	0.853	0.144	0.911	2.487	0.000
homeownership (dummy)	2.030	7.616	0.000	-3.178	0.042	0.000	-0.845	0.429	0.000	1.732	5.652	0.000
labour income (dummy)	0.132	1.142	0.044	1.843	6.316	0.000	1.782	5.939	0.000	1.370	3.936	0.000
education: low	-1.286	0.276	0.000	-3.000	0.050	0.000	-2.372	0.093	0.000	-3.827	0.022	0.000
education: medium	-0.691	0.501	0.000	-1.759	0.172	0.000	-1.566	0.209	0.000	-1.971	0.139	0.000
education: high (ref)												
country: Austria	0.726	2.066	0.000	0.837	2.310	0.125	1.478	4.385	0.000	1.262	3.534	0.000
country: Germany	0.698	2.010	0.000	-0.294	0.745	0.588	-0.418	0.659	0.264	0.240	1.271	0.065
country: Estonia	-0.763	0.466	0.000	-1.050	0.350	0.297	0.702	2.018	0.031	-1.666	0.189	0.000
country: Spain	-0.674	0.510	0.000	1.378	3.968	0.015	1.933	6.911	0.000	0.945	2.574	0.000
country: Finland	0.076	1.079	0.390	-0.148	0.863	0.807	-0.558	0.572	0.146	-0.381	0.683	0.003
country: Greece	-1.362	0.256	0.000	2.192	8.954	0.000	1.519	4.566	0.000	-0.138	0.871	0.276
country: Italy	-0.808	0.446	0.000	2.763	15.847	0.000	2.028	7.600	0.000	1.016	2.762	0.000
country: Luxembourg	-0.485	0.616	0.000	0.411	1.508	0.562	1.470	4.347	0.000	0.340	1.405	0.006
country: Norway	0.575	1.778	0.000	-0.572	0.564	0.354	-0.615	0.541	0.128	-0.488	0.614	0.001
country: Slovenia	-1.400	0.247	0.000	0.888	2.430	0.152	0.945	2.573	0.002	-1.522	0.218	0.000
country: Slovakia	-2.293	0.101	0.000	0.038	1.039	0.959	-1.177	0.308	0.006	-3.963	0.019	0.000
country: United Kingdom (ref)												

Table 3 presents the model estimates. In all eight models, the coefficients corresponding to the *homeownership* variable are statistically significant. As compared to the middle financial well-being category (*income-medium/asset medium*), older homeowners are less likely to have the status of the *income-poor/asset-poor*, *income-medium/asset-poor*, *income-rich/asset-poor* or *income-rich/asset medium*. In the case of the remaining categories, i.e. *income-poor/asset-medium*, *income-poor/asset-rich*, *income-medium/asset-rich* and *income-rich/asset-rich*, the odds for homeowners to be classified in them are greater. This generally confirms the positive relationship between homeownership and welfare status; however, this status is driven by greater wealth rather than higher income.

In the case of control variables representing household socio-demographic characteristics, the results are mostly as expected. The education of the household head is generally a significant predictor when it comes to the classification in almost all categories (only two parameters are statistically insignificant). The signs of the parameters imply that better-educated individuals are more likely to perform better in terms of economic well-being as compared to the middle category. Generally, similar conclusions can be drawn with reference to the gender variable, which is also significant in six models out of eight. However, female households are less likely to be classified in the categories associated with the income higher than 150% of the population median i.e. *income-rich/asset-poor*, *income-rich/asset-medium*, and *income-rich/asset-rich*. A quite reversed result is obtained for the *living with a partner* variable. As regards individuals still active in the labour market, one may conclude that their financial situation is generally above average, both in terms of assets and income.

Concluding discussion

With the declining pension adequacy due to population ageing, the developed countries see increased concerns about the economic well-being of the elderly households, which are more vulnerable to the poverty risk. Subsequently, as discussed in the Introduction, homeownership rates in this group are greater than in the younger cohorts. This encourages the discussion on the actual potential of housing wealth to complement the income in old age.

This paper aims to identify the existing patterns in terms of income and wealth package with reference to the elderly households, as well as to examine the role of housing in shaping their economic position in society. Our approach assumes that income, and specifically the fact of being below or above the monetary poverty threshold, does not comprehensively reflect the welfare of the elderly. Therefore, we combine both current income and wealth accumulated by households. Our approach accounts for different perspectives. First, the paper includes cross-country comparisons. Second, intergenerational comparisons are also incorporated. We also estimate macro-level country statistics, as well as refer to a household level to ensure a more comprehensive outlook.

To address the question of how common the phenomenon of ‘income-rich, asset-poor’ elderly households is and which categories of income and welfare packages prevail, we adopted the relative measurement referring to the average level expressed by country population medians. Our results imply that the scale of ‘income-rich, asset-poor’ elderly households is relatively small, amounting to an average of 4% for all countries studied. Nonetheless, there are considerable country-specific differences in this respect, with the maximum value of 14% reported for Estonia. When the younger generation is analysed, the income-poor and asset-rich households account for an average of 2% of the non-elderly households across the 12 countries, which is twice smaller than in the case of the elderly. This is quite natural due to the unpaid mortgage which diminishes net housing wealth in the younger cohorts. In a simplified approach considering income levels and wealth levels independently,

we can also observe that there are more income-poor elderly households and asset-rich elderly households than non-elderly ones.

Nevertheless, the category of income-poor/asset-rich elderly households constitutes a target group for different strategies aimed at unlocking home equity to improve their financial well-being in old age. The share of elderly households falling into this category is quite narrow, which is even more striking when we take into account that our income threshold (50% of the total population median income) to classify a household as income-poor is relatively high as compared to other thresholds commonly applied as relative poverty lines, i.e. 30% or 40% (Förster and D'Ercole, 2012). In general, it can be concluded that most elderly households report a medium income level, i.e. ranging from 50% to 150% of the total population median income, and at the same time hold wealth that can also be regarded as medium or high (above 150% of the total population median net wealth).

Our analysis puts a special emphasis on the role of homeownership. When the country level of aggregation is adopted, we can observe that in the case of most countries studied, higher homeownership rates among elderly households, as compared to non-elderly households, are not accompanied by proportionally greater household wealth, even though the non-elderly are additionally burdened by the mortgage debt. This may be explained by the relatively high homeownership rates in 10 out of 12 countries studied—especially among the elderly population—which is also associated with the significance of owning a home for wealth distribution. Namely, if homeownership is universal or close to universal in a given country, then the sole fact of being a homeowner has a lesser impact on the position of a household in terms of wealth distribution. It is determined to a greater extent by such factors as the value of a home (housing wealth) or other financial and non-financial assets owned. In countries where homeownership is not common, the fact of being a homeowner should have a greater significance for the wealth stock. Such results correspond well with findings presented by Dewilde and Raeymaeckers (2008) who prove that the poverty-reducing effect of being a homeowner tends to decrease with high homeownership.

Nevertheless, we also observe some inconsistency between results reported for the macro-level and the micro-level. In the multivariate analysis conducted for the household level of aggregation and comprising logit regression, we find some evidence for a positive relationship between tenure and the household situation in terms of income and wealth package. When controlling for socio-demographic household characteristics, being a homeowner is associated with a smaller likelihood of being in a poor economic position relative to the total population. The results also imply that homeownership contributes most notably to the improvement in terms of the position related to the accumulated wealth. In this regard, to some extent they contradict the findings resulting from the analyses conducted for the country level. However, one must bear in mind that aggregation alters the perspective and the point of reference. This is also a premise to explore this phenomenon in further studies.

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References

- Ando A and Modigliani F (1963) The 'Life Cycle' Hypothesis of Saving: Aggregate Implications and Tests. *The American Economic Review* 53(1): 55–84. DOI: 10.1126/science.151.3712.867-a.
- Arrondel L, Bartiloro L, Fessler P, et al. (2016) How do households allocate their assets? Stylized facts from the Eurosystem household finance and consumption survey. *International Journal of Central Banking* 12(2): 129–220. DOI: 10.2139/ssrn.2490969.
- Arundel R (2017) Equity Inequity: Housing Wealth Inequality, Inter and Intra-generational Divergences, and the Rise of Private Landlordism. *Housing, Theory and Society* 34(2): 176–200. DOI: 10.1080/14036096.2017.1284154.
- Bernheim BD, Skinner J and Weinberg S (2001) What accounts for the variation in retirement wealth among U.S. households? *American Economic Review* 91(4): 832–857. DOI: 10.1257/aer.91.4.832.
- Blake D (2006) *Pension Economics*. Chichester: John Wiley and Sons.
- Borg I (2015) Housing Deprivation in Europe: On the Role of Rental Tenure Types. *Housing, Theory and Society* 32(1): 73–93. DOI: 10.1080/14036096.2014.969443.
- Bradbury B (2010) *Asset Rich, But Income Poor: Australian Housing Wealth and Retirement in an International Context*.
- Bravo JM, Ayuso M and Holzmann R (2019) Making Use of Home Equity: The Potential of Housing Wealth to Enhance Retirement Security. *IZA Discussion Paper* 12656.
- Browning M and Crossley TF (2001) The Life-Cycle Model of Consumption and Saving. *Journal of Economic Perspectives* 15(3): 3–22. DOI: 10.1257/jep.15.3.3.
- Campbell J and Mankiw N (1989) Consumption, income and interest rates: Reinterpreting the time series evidence. *NBER Macroeconomics Annual 1989, Volume ...* 4: 185–246. DOI: 10.2307/3584974.
- Campbell JY and Deaton A (1989) Why Is Consumption So Smooth? *Review of Economic Studies* 56(3): 357–73. DOI: 10.2307/2297552.
- Carroll CD and Summers LH (1991) Consumption growth parallels income growth: Some new evidence. In: Bernheim D and Shoven J (eds) *National Saving and Economic Performance*. Chicago: University of Chicago Press, pp. 305–343.
- Castles F (1998) The really big trade-off: Home ownership and the welfare state in the new world and the old. *Acta Politica* 33(1): 5–19.
- Causa O, Woloszko N and Leite D (2019) Housing, wealth accumulation and wealth distribution: Evidence and stylized facts. *OECD Working Papers* 1588. Available at: <https://dx.doi.org/10.1787/86954c10-en>.
- Christophers B (2021) A tale of two inequalities: Housing-wealth inequality and tenure inequality. *Environment and Planning A: Economy and Space* 53(3): 573–594. DOI: 10.1177/0308518X19876946.
- Cowell F, Nolan B, Olivera J, et al. (2017) Wealth, Top Incomes and Inequality. *LWS Working Paper* 24.
- Davidoff T (2012) Housing Wealth over the Life Course. *International Encyclopedia of Housing and Home*. Elsevier: 697–702. DOI: 10.1016/B978-0-08-047163-1.00132-6.
- Dewilde C and Raeymaeckers P (2008) The trade-off between home-ownership and pensions:

- Individual and institutional determinants of old-age poverty. *Ageing and Society* 28(6): 805–830. DOI: 10.1017/S0144686X08007277.
- Di ZX, Belsky E and Liu X (2007) Do homeowners achieve more household wealth in the long run? *Journal of Housing Economics* 16(3–4). Academic Press: 274–290. DOI: 10.1016/J.JHE.2007.08.001.
- Doling J and Elsinga M (2013) *Demographic Change and Housing Wealth: Home-Owners, Pensions and Asset-Based Welfare in Europe*. London: Springer. DOI: 10.1007/978-94-007-4384-7.
- Doling J and Ronald R (2010) Property-based welfare and European homeowners: How would housing perform as a pension? *Journal of Housing and the Built Environment* 25: 227–241. DOI: 10.1007/s10901-010-9184-7.
- Eurostat (2020) *Ageing Europe - Looking at the Lives of Older People in the EU*.
- Forrest R (2008) Globalization and the Housing Asset Rich. *Global Social Policy* 8(2): 167–187. DOI: 10.1177/1468018108090637.
- Förster MF and D’Ercole MM (2012) The OECD Approach to Measuring Income Distribution and Poverty. In: *Counting the Poor: New Thinking About European Poverty Measures and Lessons for the United States*. DOI: 10.1093/acprof:oso/9780199860586.003.0002.
- Frick JR, Grabka MM, Smeeding TM, et al. (2010) Distributional effects of imputed rents in five European countries. *Journal of Housing Economics* 19(3): 167–179. DOI: 10.1016/j.jhe.2010.06.002.
- Gornick JC, Sierminska E and Smeeding TM (2009) The Income and Wealth Packages of Older Women in Cross-National Perspective. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 64B(3): 402–414. DOI: 10.1093/geronb/gbn045.
- Kemeny J (1981) *The Myth of Home Ownership: Public versus Private Choices in Housing Tenure*. London: Routledge.
- Luxembourg Wealth Study (LWS) Database*. <http://www.lisdatacenter.org> (multiple countries; June 2021). Luxembourg: LIS.
- Mathä TY, Porpiglia A and Ziegelmeyer M (2017) Household wealth in the euro area: The importance of intergenerational transfers, homeownership and house price dynamics. *Journal of Housing Economics* 35: 1–12. DOI: 10.1016/j.jhe.2016.12.001.
- Modigliani F and Brumberg R (1954) *Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data*. DOI: 10.4324/9781315016849.
- OECD (2013) The role of housing, financial wealth and public services for adequate living standards in old age. In: OECD Publishing (ed.) *Pensions at a Glance 2013: OECD and G20 Indicators*. Paris.
- Parker JA (1999) The Reaction of Household Consumption to Predictable Changes in Social Security Taxes. *American Economic Review* 89(4): 959–973. DOI: 10.1257/aer.89.4.959.
- Prabhakar R (2019) A house divided: asset-based welfare and housing asset-based welfare. *International Journal of Housing Policy* 19(2): 213–231. DOI: 10.1080/19491247.2018.1441008.
- Romiti A and Rossi M (2012) Housing wealth decumulation, portfolio composition and financial literacy among the European elderly. *Carlo Alberto Notebooks* December(289).
- Schmidt-Hebbel K and Serven L (1997) *Saving across the world. Puzzles and policies*. World Bank Discussion Papers. 354.

- Shapiro MD and Slemrod J (1995) Consumer Response to the Timing of Income: Evidence from a Change in Tax Withholding. *American Economic Review* 85(1): 274–283. DOI: 10.2307/2118010.
- Sherraden M (1991) *Assets and the Poor: A New American Welfare Policy*. New York: M.E. Sharpe.
- Sykes LL (2003) Income Rich and Asset Poor: A Multilevel Analysis of Racial and Ethnic Differences in Housing Values among Baby Boomers. *Population Research and Policy Review* 22(1): 1–20. DOI: 10.1023/A:1023555732194.
- Watson D and Webb R (2009) Do Europeans view their homes as Castles? Homeownership and poverty perception throughout Europe. *Urban Studies* 46(9): 1787–1805. DOI: 10.1177/0042098009106020.
- Wind B, Dewilde C and Doling J (2020) Secondary property ownership in Europe: contributing to asset-based welfare strategies and the ‘really big trade-off’. *International Journal of Housing Policy* 20(1): 25–52. DOI: 10.1080/19491247.2019.1573961.

Appendix 1

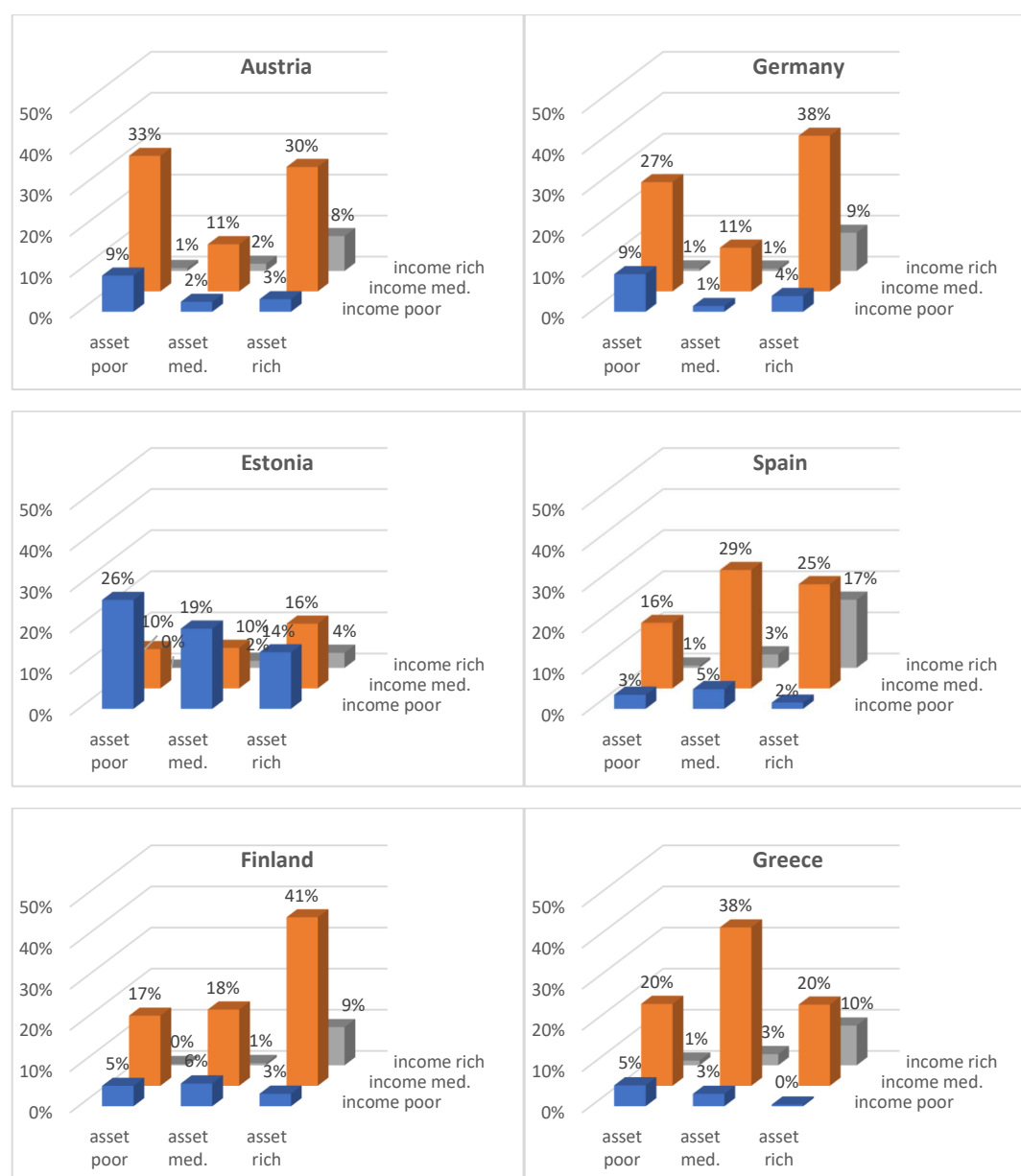


Figure A1. Distribution of income and wealth across elderly households – country profiles

Source: own calculations based on LWS dataset

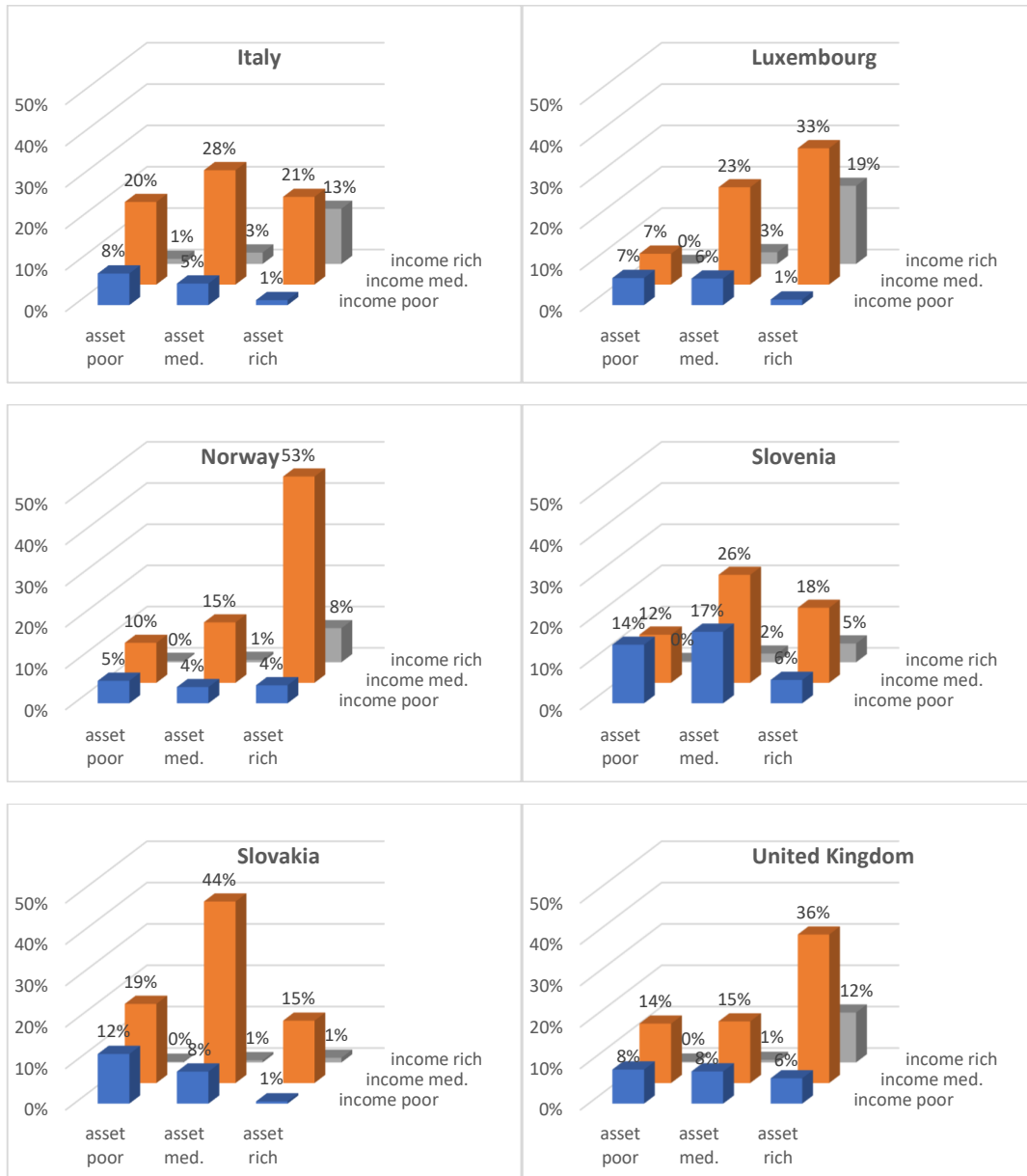


Figure A1. (continued)

Source: own calculations based on LWS dataset