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Is there a trade-off between housing and pension system generosity? Empirical evidence from the Luxembourg Wealth Study

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What is our research question?

Is there a trade-off between pension system generosity and pensioners' housing wealth?

Socio-economic context matters

- Population ageing and increasing life expectancy
- An insufficient increase in the statutory retirement age
- Shrinking labour force supply
- Expected declining replacement rates
- An expected increase in old-age poverty rates
- Political barriers in reforming pension systems
- A decrease in the populations of developed countries vs housing supply

Why do we ask this question? A literature review

- In the second half of the 20th century, homeownership rates increased in most of the developed countries (Andrews & Caldera Sánchez, 2011; Castles, 1998).
- There is some empirical evidence that housing wealth has the potential to be a source of additional income in the old age (see, e.g., Doling & Elsinga, 2013; Toussaint, 2011; Toussaint & Elsinga, 2009).
- A considerable strain of the literature points to the poverty-reducing effect of homeownership (Borg, 2015; Bravo et al., 2019; Dewilde & Raeymaeckers, 2008; Doling & Ronald, 2010; Matel & Marcinkiewicz, 2020; Megyeri, 2018).
- Using housing equity as a source of income includes several strategies that elderly households can employ: different forms of renting, selling, and reverse mortgage (Doling & Elsinga, 2013; Sendi et al., 2019).
- Kemeny's hipothesis (1980, 1981). The Really Big Trade-off (Castle, 1998). Asset-Based Welfare (Sherraden, 1991) and Housing Asset-Based Welfare (Prabhakar, 2019 for review).

Empirical research

- Luxembourg Wealth Study (LWS), wave X comprising years 2016-2017. The following countries are included: Austria, Germany, Estonia, Spain, Finland, Greece, Italy, Luxembourg, Norway, Slovakia, Slovenia, the United Kingdom.

- The analysis is conducted for elderly households which receive pension income. For the purpose of this study, they are identified as households that meet two conditions jointly: 1) they are composed solely of individuals aged 65 and above, and 2) a household head reports labour force status retired.

Key variables operationalisation

- ***Housing assets to total assets*** at the household level is expressed by the market value of the principal residence and other real estate owned by household members, given in relative terms as a percentage share of total assets (both, financial and non-financial). This enables evaluating the importance of housing wealth as compared to the total household assets.

- Mortgage debt is not accounted for in this formula, because the study aims at exploring wealth accumulation preferences in terms of investment vehicles rather than estimating household net worth. Nevertheless, older households rarely have unpaid mortgage debt (OECD, 2013a).

- In our study, the size of the accumulated (gross) housing wealth is expressed in relative terms, i.e. as compared to total household assets. This enables us to analyse the phenomena irrespective of the position of a household in the wealth distribution. Only after eliminating differences in total wealth among households is it possible to explore the preferences of households towards housing assets accumulation

- Additionally, for further analysis, this variable is referenced to the thresholds 25%, 50% and 75% to distinguish between four categories: low share (housing assets to total assets between 0 and 25%), low medium share (25-50%), high medium share (50-75%), and high share (75-100%).

Key variables operationalisation

- To proxy pension system generosity, we estimate ***empirical replacement rate***. For the purpose of this study, the empirical replacement rate is defined as a ratio between a household head's individual pension income and country-specific average wage in the economy. In addition, if a household head's partner also receives pension income, her or his replacement rate is calculated likewise, and the empirical replacement rate is given as a mean of both individual replacement rates.

- Pension income in the numerator of the formula includes public contributory and non-contributory pensions, as well as private occupational and individual pensions, if applicable. The denominator of the ratio employs OECD statistics concerning annual average wages reported for the year in accordance with the time of LWS survey in each country under investigation.

- The empirical replacement rate calculated in this manner, contrary to the standard individual replacement ratio based on longitudinal data, does not require information on individual income from the past (before retirement), but it refers to the average remuneration in a particular country. It can be identified as empirical actual cross-sectional family-based replacement rate combining the individual and average level of aggregation (see Borella & Fornero, 2009). In defining income replacement, our approach is similar to that adopted by Gran (1997) who employs Luxembourg Income Study microdata to analyse particular components of incomes of the elderly also expressed relative to the national average.

Results

Table 1. Housing and pensions statistics by country

Country	*Housing assets to total assets* (%)			*Empirical replacement rate* (%)			*Homeowner ship rate* (%)	*Old-age pension expenditure* (% GDP)	*Old-age pension expenditure* (% GDP) adjusted by ODR
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.			
Austria	39.1	0.0	42.1	53.9	49.3	25.7	43.8	10.5	0.35
Germany	51.3	68.9	41.7	48.1	42.9	25.1	60.4	8.7	0.25
Estonia	61.6	76.4	37.7	32.6	31.0	15.8	77.0	4.6	0.14
Spain	72.5	85.5	31.8	53.3	44.5	31.5	83.4	8.1	0.26
Finland	62.4	76.9	36.0	51.1	46.0	24.5	76.6	10.6	0.29
Greece	81.4	94.7	30.4	62.2	56.1	28.7	84.8	13.6	0.37
Italy	64.2	81.1	36.1	55.6	47.7	33.4	77.0	11.1	0.30
Luxembourg	75.7	87.6	28.9	62.6	58.3	39.3	89.3	5.1	0.23
Norway	61.6	73.4	33.5	56.0	52.5	21.9	77.4	7.4	0.26
Slovenia	81.7	95.1	29.9	26.5	25.9	18.8	88.3	7.6	0.25
Slovakia	84.9	94.3	26.2	40.2	38.4	11.6	90.9	6.3	0.27
United Kingdom	50.4	61.9	32.5	19.3	10.4	26.2	74.8	9.7	0.31

Source: own calculations based on LWS data and Eurostat statistics (Pension expenditure data for 2017, ODR data for 2017)

Results

Table 2. Correlation coefficients

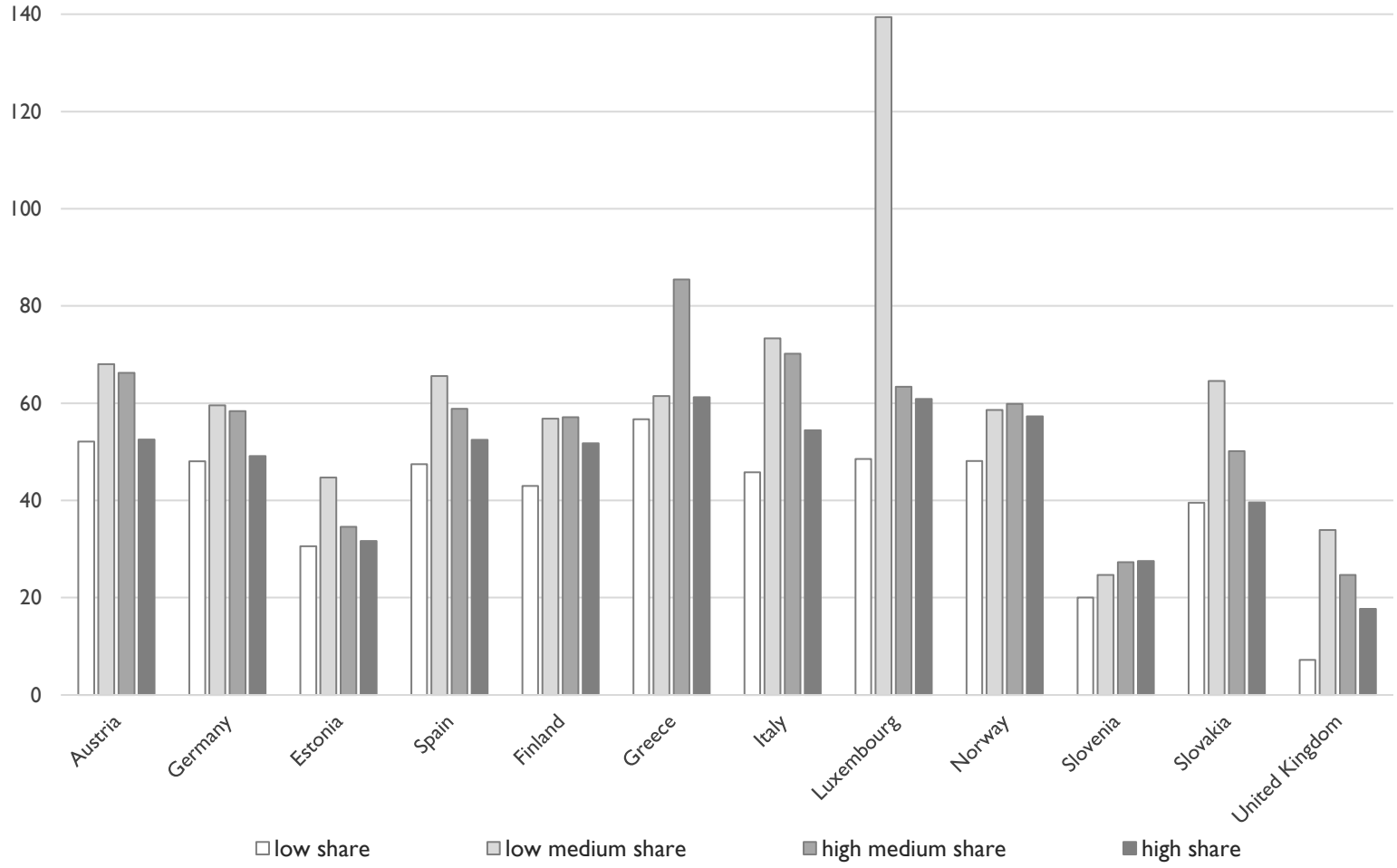
	Housing assets to total assets (mean)	*Empirical replacement rate (mean)*	*Homeownership rate*	*Old-age pension expenditure (% GDP)*	*Old-age pension expenditure (% GDP) adjusted by ODR*
Housing assets to total assets (mean)	1.00				
Empirical replacement rate (mean)	0.09 (0.11)	1.00			
Homeownership rate	0.91 (0.91)	-0.08 (0.18)	1.00		
Old-age pension expenditure (% GDP)	-0.19 (-0.18)	0.28 (0.21)	-0.31 (-0.47)	1.00	
Old-age pension expenditure (% GDP) adjusted by ODR	-0.14 (-0.15)	0.30 (0.17)	-0.28 (-0.29)	0.87 (0.81)	1.00

Note: figures represent Pearson correlation coefficients and Spearman rho coefficients (in brackets).

Source: own calculations based on LWS data and Eurostat statistics (Pension expenditure data for 2017, ODR data for 2017)

Results

Figure 2. Mean empirical replacement rate [%] across pensioners' households representing different levels of the share of housing assets in total assets



Results

Table 3. Multinomial logistic regression modelling

	housing assets in total assets: low medium share				*housing assets in total assets: high medium share*				*housing assets in total assets: high share*			
	B	Exp(B)	Std. Error	Sig.	B	Exp(B)	Std. Error	Sig.	B	Exp(B)	Std. Error	Sig.
Intercept	0.572		0.422	0.175	0.115		0.283	0.686	0.449		0.219	0.040
replacement rate	0.026	1.027	0.001	0.000	0.022	1.022	0.001	0.000	0.013	1.013	0.001	0.000
age	-0.023	0.977	0.005	0.000	-0.004	0.996	0.004	0.265	-0.011	0.989	0.003	0.000
gender (female=1)	-0.493	0.611	0.075	0.000	0.023	1.023	0.050	0.650	0.152	1.164	0.039	0.000
labour income	0.762	2.143	0.124	0.000	0.853	2.348	0.096	0.000	0.690	1.993	0.084	0.000
living with a partner	1.049	2.854	0.076	0.000	1.396	4.040	0.054	0.000	1.033	2.809	0.044	0.000
education: low	-0.576	0.562	0.105	0.000	-0.586	0.557	0.074	0.000	-0.187	0.830	0.061	0.002
education: medium	-0.284	0.753	0.093	0.002	-0.385	0.680	0.068	0.000	-0.182	0.833	0.058	0.002
education: high (ref)												
country: Austria	-3.123	0.044	0.160	0.000	-2.881	0.056	0.105	0.000	-1.056	0.348	0.085	0.000
country: Germany	-2.561	0.077	0.151	0.000	-2.248	0.106	0.098	0.000	-0.417	0.659	0.083	0.000
country: Estonia	-0.783	0.457	0.129	0.000	-0.893	0.409	0.092	0.000	0.473	1.604	0.082	0.000
country: Spain	-0.994	0.370	0.160	0.000	-0.941	0.390	0.120	0.000	1.066	2.903	0.102	0.000
country: Finland	-1.072	0.342	0.131	0.000	-1.281	0.278	0.099	0.000	0.307	1.360	0.087	0.000
country: Greece	-2.574	0.076	0.255	0.000	-1.773	0.170	0.141	0.000	1.355	3.876	0.106	0.000
country: Italy	-1.905	0.149	0.165	0.000	-1.311	0.269	0.105	0.000	0.509	1.664	0.090	0.000
country: Luxembourg	-1.514	0.220	0.189	0.000	-0.932	0.394	0.129	0.000	1.276	3.583	0.110	0.000
country: Norway	-0.997	0.369	0.139	0.000	-1.106	0.331	0.107	0.000	0.268	1.308	0.096	0.005
country: Slovenia	-0.524	0.592	0.171	0.002	-0.962	0.382	0.129	0.000	1.921	6.831	0.096	0.000
country: Slovakia	-2.823	0.059	0.416	0.000	-0.958	0.384	0.146	0.000	1.934	6.918	0.115	0.000
country: United Kingdom (ref)												

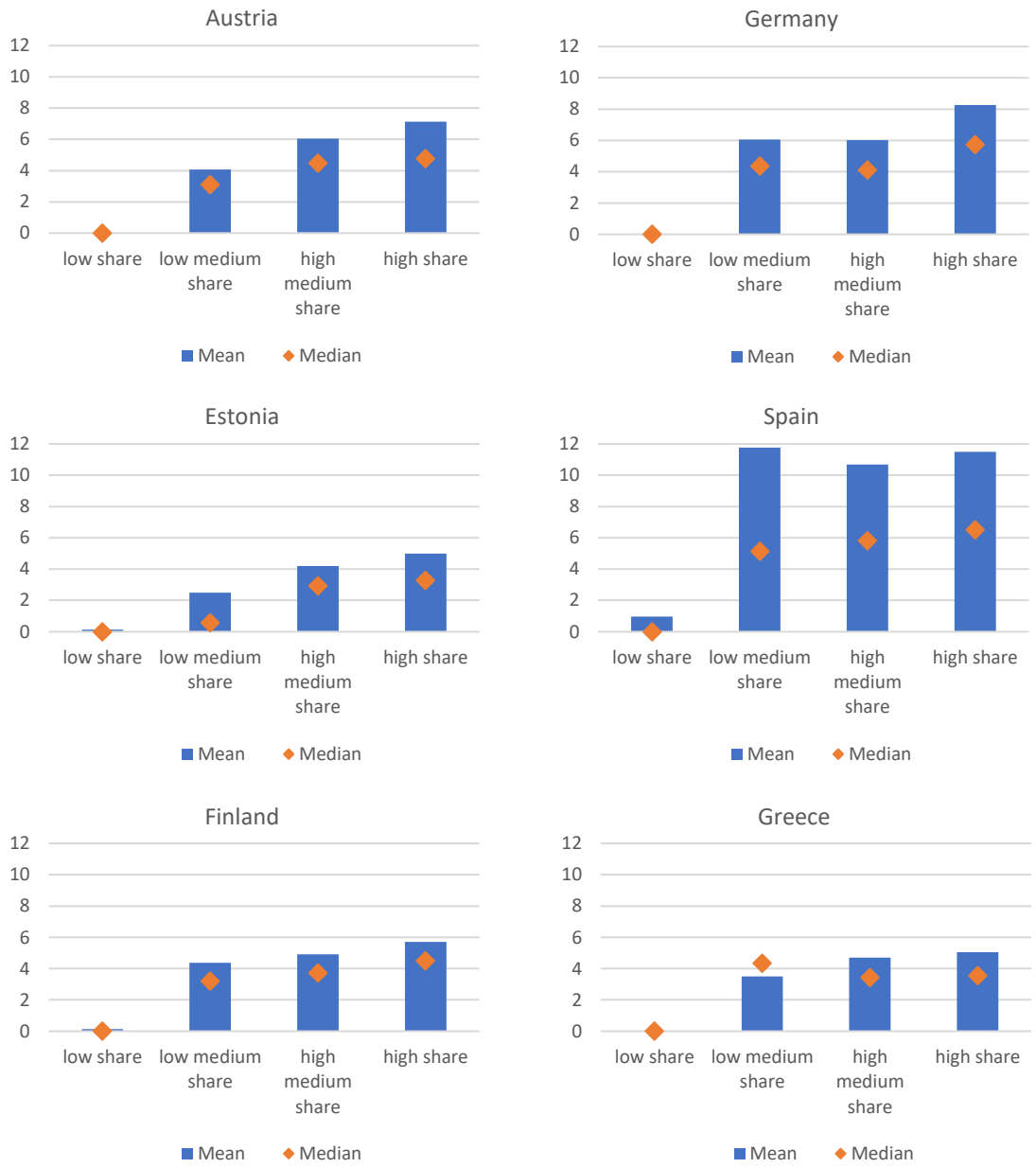
Conclusions

- Our study attempts to identify some patterns concerning wealth accumulation preferences among elderly households. We pose a question whether these patterns can be associated with pension generosity measured by the level of income replacement. This can be referenced to the discussion on the 'Really Big Trade-Off' hypothesis. Whereas originally it refers solely to country-level indicators, the evidence provided in this study is based to a great extent on the microdata. However, we use them in both, aggregated (country level) and disaggregated (individual) forms. This way, the analysis combines macro- and micro-level approaches.
- An analysis of the relationship between (average) pension system generosity and the (average) share of housing assets in total assets at the country level using aggregated values does not provide any evidence for the pensions-housing trade-off. However, when the level of aggregation is reduced, a somewhat different picture emerges. Especially when the households having very small or no housing assets relative to total assets are excluded, it becomes clearer that individuals receiving higher pension tend to differentiate their asset portfolio.
- A possible explanation for this result could be that housing equity becomes less attractive as its role of old-age security is limited by pension generosity. And *vice versa*, households receiving smaller pension could give more importance to housing property as a more stable investment vehicle. It should be noted that wealth accumulation is realised in the long-term perspective. Therefore, the current wealth components owned by the elderly are to a large extent the effect of choices made in the distant past. Similarly, expectations as to the adequacy of future pension benefits can shape the saving behaviour and portfolio choices of households over the whole working life.

Conclusions

- The results of cross-country comparisons imply that there are large differences between countries in terms of housing wealth accumulation. Quite opposite patterns can be observed for familialistic welfare states – represented by Mediterranean countries and CEE countries such as Slovakia, Greece, Slovenia - and representatives of liberal and conservative welfare states such as the United Kingdom, Austria and Germany.
- The question about the trade-off between pensions and housing becomes even more interesting in the context of the current trends in housing regarding the generation of young adults and the changes in the labour market. In the post-GFC period, homeownership expansion has been hampered by labour insecurity associated with a more precarious labour market. The latter phenomenon will simultaneously result in reduced adequacy of pension benefits in the future. This may entail serious repercussions for the welfare of the elderly in the years to come.

Figure A1. Average household housing assets relative to the annual average wage across housing assets to total assets categories.



Results

Figure 1. Percentage of pensioners' households representing different levels of the share of housing assets in total assets