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NOVA UNIVERZA FAKULTETA ZA DRŽAVNE IN EVROPSKE ŠTUDIJE

Residential real estate investments from the perspective of Act on Social Security Benefits¹

David Bogataj² and Boštjan Aver³

1. The Act on Social Security Benefits (ZSVarPre)

On 13 July 2010 the new Act on Social Security Benefits "Zakon o socialno varstvenih prejemkih" was published in the Official Gazette of the Republic of Slovenia (RS). This Law regulates the right to social assistance, the right to a pension and describes the beneficiaries. Under this Act, the conditions for entitlement to social assistance and income support, their extent, the allocation period and the payment method for coordination, the assessment procedure for unduly received social assistance, its consequences and how the repayment of received social assistance, financing, monitoring and data collection is determined.

Social assistance and income support for the social assistance benefit is intended for those individuals whose ability to survive without this assistance is very limited. According to this Act, those who cannot survive on wage, pension income, direct income from property (renting) and other sources, and also those who cannot survive from some other compensation or benefits under other regulations, or with the help of those who are obliged to support them, are entitled to social assistance in the amount and on the conditions laid down by this Act. Therefore, eligible persons who are permanently unemployable or permanently unable to work or are older than 63 years (women) or 65 years (men) are entitled to social assistance up to the point where they are not in a better social position than others having rights on the basis of minimum labour rights. The amount of social assistance for a bene-

¹The paper forms part of a PhD Thesis: D. Bogataj, 2012.

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ficiary who has no income under this Act is fixed at the minimum wage which belongs to the beneficiary under this Act. The minimum income amounts to $\in 288$, which is extremely low. We do not believe that someone can survive solely on this level of income. The amount of social assistance for other beneficiaries is determined as the difference between the minimum income that belongs to the beneficiary ($\in 288$) and his own income, determined in the manner provided by the Act. Some extraordinary financial social assistance⁴ and a regular increase in social assistance to supplement the care is also possible⁵.

According to Article 32, a beneficiary of social assistance who, due to age, illness or a disability to perform basic daily activities needs urgent assistance from another person and receives no allowance for care and assistance under other regulations, the social assistance is increased to cover the allowance and attendance as well the need for emergency assistance of another person, determined by the Disability Commission, in accordance with the regulations on pension and disability insurance. The level of allowance for aid and attendance is determined as the amount of allowance for aid and attendance which would belong to the beneficiary if they were entitled to it under the pension and disability insurance regulations. However, this increase in social assistance is not the subject of our interest here.

The main problem we recognise here is that a property-owning beneficiary of this kind of social security who benefits from this decision on entitlement to income support must dispose of the prohibited burden on the property they own. According to this legislation, this should be done in favour of the Republic of Slovenia:

(a) Irrespective of the value of the beneficiary's property and their life expectancy; and

(b) the Republic of Slovenia has no obligation to sell this property at fair value, which is a particularly big problem in the case of an illiquid real estate market.

The Act thus determines that all social security transfers are kinds of loans to property holders, except for increases in social assistance to support the care described in Article 32. The state has the right, upon the issue of a written order, to mortgage the real

⁴Act on Social Security Benefits -ZSVarPre, Official Gazette of RS 61/2010, Article 33.

⁵ Act on Social Security Benefits - ZSVarPre, Official Gazette of RS 61/2010, Article 32.

property of a beneficiary. The Act also enables the government to prevent a beneficiary from selling or in any other way alienating their property. In this paper, we argue that this Act is inequitable to property holders because the values of the transfers involved are not actuarially fair as they are not evaluated according to the age of a beneficiary and the value of the real property they hold. The Act on Social Security Benefits reduces the mobility of the beneficiary contrary to the needs of an ageing population ^{6,7} (Demirkan; 2007, Bogataj et al., 2012), and exposes the beneficiary's estate to the risk of losing value due to a forced sale of the real estate in the illiquid Slovenian market. The paper presents how the introduction of a reverse mortgage as a financial instrument in the Slovenian legal system can improve the social security of the inhabitants. After the death of a beneficiary, the property is sold without any special restrictions on the sale. Therefore, some potential beneficiaries are now refusing assistance mainly because they:

(a) would thereby lose the unlimited right to sell their property and buy another one more convenient in view of their restricted mobility, which increases by age;(b) do not believe that their property will be sold at fair value; and

(c) do not trust that the interest rate of their borrowing will stay at zero as assures the Act, and they are afraid that it will be high when their obligations to the Republic of Slovenia are finally being calculated.

They therefore believe they have no guarantee of any amount their relatives can inherit from this asset after they die. This is the reason we need a new mechanism to better manage this property, to convince the elderly that managing their remaining property will be good enough, and to protect property owners on the municipal level, the NUTS-3 level or at least on the national level. This financial instrument should be based on economies of scale so that the organisational costs are not too high, and it should be kept under public control. At the same time, potential beneficiaries should be well informed of all possible options they would have available when reverse-mortgage products are to be offered. Slovenia is not the only European state encountering the problem

⁶H. Demirkan, Housing for the ageing population, Eur Rev Ageing Phys Act 4, 2007, pp 33–38.

⁷ D. Bogataj, A. Temeljotov Salaj, B. Aver in: K. Michell, P. Bowen, K. Cattell, Delivering value to the community, 2011, pp. 437.

of an ageing population, in fact all European countries are facing similar problems. The crisis in funding the poor elderly and especially financing elderly care is also creating many problems in the UK where some other products proposed here (the reverse mortgage) were developed some time ago. Around 1.2 million frail or vulnerable people in the UK rely on care services provided by their local council (elderly care in the UK is the responsibility of local government). Municipal councils are legally required to provide some services such as bin collection, schools, roads and care for the most vulnerable. Care for the elderly accounts for more than 40% of all local budgets and this amount is supposed to be doubled by 2015. Therefore, local governments are urging the state to act now to avoid 'dangerous' delays in agreeing on a reform of services for the elderly. A failure to reach an agreement soon on how to pay for care for the rapidly ageing population could force the councils to divert funds from discretionary services such as parks and other amenities for other local population groups to 'plug the gap' for the elderly, which is increasing. They are afraid that any further delay in reforming social care could tip the social system over⁸. In 2011, an official commission chaired by the economist Andrew Dilnot recommended setting a cap of £35,000 on payments for care over a lifetime, but the Dilnot Commission also proposed raising the asset threshold above which the elderly do not receive help with social care costs from £23,250 to £100,000, which is many times more than the amount identified in the Slovenian Act. The UK government as like the Slovenian is planning to publish a White Paper on care and support soon with the hope of finding a sustainable long-term solution to social care funding.

2. The reverse mortgage as an equity release scheme

Home ownership can provide a means to redistribute the income of an inhabitant over the life cycle⁹. While a younger homeowner pays a substantial amount of his/her income to support the housing purchase, paying off a mortgage over 30 years or even longer, in later life once the mortgage debt has been paid off, they

⁸ http://guides.temple.edu/health-care-reform.

⁹U. Reifner et al., Study on Equity Release Schemes in the EU, 2009, 134 or (accessed on 12/7/2011), http://ec.europa.eu/internal_market/finservices-retail/docs/credit/equity_release_part1_en.pdf/.

can apply for a reverse mortgage or join some other equity release scheme if such instruments are organised in the state they live in. In this way houses can function as pensions and investments for pensions. The hypothetical potential of home ownership as a pension in Slovenia and its performance in the European context should be examined.

According to Ronald¹⁰, "housing provides a flow of services (shelter, warmth and comfort, private family space etc.), as a use good; as well as constitute an investment good in terms of a store of current asset value and potential capital gains. (a) An 'income in cash' lies in the capital value or equity of the dwelling. Insofar as dwellings are tradable commodities each will have a market price that represents the valuation as a capital asset. People who acquire the ownership of a dwelling thus have a store of wealth, the value of which may increase or decrease over time, and, like other stores of wealth, provide opportunities to realise the value in the form of cash. These opportunities cannot always be easily taken up, hence the use of the phrase "income embedded in housing". Nevertheless, they might be achieved by selling the house and moving to a cheaper house that is, releasing some of the equity, or moving into a rented property, thereby releasing all the equity. An alternative may be to remain in the home while using a financial product such as a reverse mortgage or equity release loan to achieve a cash income. While (b) an 'income in kind' represents the flow of services derived from the size and quality of the dwelling and its location. Dwellings that are larger, have more expensive and desirable facilities, and are in locations with good access to desirable land uses, will tend to attract higher market prices than small, poorly equipped dwellings in unattractive locations. This market price can be thought of as proportional to the rent that the dwelling would attract. Owner-occupiers, who of course do not literally pay rent to themselves, nevertheless may be considered to receive a flow of services with a value equivalent to the rent that the dwelling would attract, were it on offer in the market, which may be considered an income in kind".

A reverse mortgage (RM) allows people to release the equity tied up in their homes, while continuing to live in them until their

 $^{^{\}rm 10}$ R. Ronald, Between investment, asset and use consumption: The meaning of home ownership in Japan. Housing Studies 2008, pp. 233-251.

death as an owner of their home (having income in kind). Some other equity release schemes also exist where owners sell their home at the beginning of the horizon of the scheme while continuing to live in them until their death as a permanent tenant, with all rights, and without paying any rent under this scheme (also having income in kind). Within this framework, in some places and for some specific products it also possible to change one's home for a smaller and more appropriate home and to evaluate these transfers on actuarial bases through amendments to the basic agreement. Such possibilities are seriously limited by the Act on Social Security Benefits.

In the USA, this instrument is well developed and known as a needs-based product where 80% of RM borrowers require this product to maintain and sustain their standard of living, and can significantly improve their cash flow. In the USA, they see this instrument as material for retiring baby boomers who do not have access to the generously defined benefit occupational retirement plans of earlier generations. In the last 20 years, many companies have closed off new employees' access to their defined benefit pension plans and have offered them instead only defined contribution pension plans in which the employees bear all the financial risks. This approach to pension products has hurt members of the defined contribution pension plans, with the values of their pension funds seeing a 30% drop in their previous value during the last financial crisis. Therefore, in the USA the popularity of RMs is growing. The market more than doubled from 2005 till 2007 and is still expanding, as presented in Table 1. Many inhabitants regard the reverse mortgage as a lifesaver from paying off an existing mortgage to providing for basic needs like heat, food or prescription drugs, especially after the crisis appeared. The funds can be used to make home modifications, pay for in-home healthcare and other needs of the elderly. In the USA, to qualify for an RM a beneficiary must be at least 62 years old, own their home and live in it as their primary residence.

Fortunately, credit rating and income have no bearing on loan approvals. Therefore, this is an ideal product for those with a low income. Loan amounts depend on the age of the borrower, the value of the home and its location, which indicate the net present value potential of each home. If a potential beneficiary has an existing mortgage, they must be able to pay it off with funds from the reverse mortgage. The instrument has been especially welcome in times of recession, when many home-owners lost their chance to earn by doing additional jobs. In the USA, there are publicly and privately insured RM products. The Home Equity Conversion Mortgage (HECM) is the only federally insured reverse mortgage product¹¹. It accounts for most reverse mortgages made today in the USA, and Table 1 presents the numbers of HECM loans made in each federal fiscal year (FY) since the programme began. After a long debate in the European Commission in 2006, this instrument was also discussed in the Green Paper on Pensions¹² along with some European projects like the DEMHOW project¹³. Some conclusions have been put forward at the European Commission, which should be discussed.

Fiscal	Products	Fiscal	Products	Fiscal	Products
year	sold	year	sold	year	sold
FY 2012	9,307*	FY 2004	37,829	FY 1996	3,596
FY 2011	73,131	FY 2003	18,097	FY 1995	4,165
FY 2010	79,106	FY 2002	13,049	FY 1994	3,365
FY 2009	114,692	FY 2001	7,781	FY 1993	1,964
FY 2008	112,154	FY 2000	6,64	FY 1992	1,019
FY 2007	107,558	FY 1999	7,982	FY 1991	389
FY 2006	76,351	FY 1998	7,896	FY 1990	157
FY 2005	43,131	FY 1997	5,208	Total	734,602

Table 1: Number of HECM loans by fiscal years

Source: http://www.nrmlaonline.org/rms/statistics/default. aspx?article_id=601.

The Commission has addressed the suggestions presented in DEMHOW project and has included them in the Green Paper on Pensions. It was suggested that access to reverse mortgages might be extended "as an additional pension pillar", to maintain an adequate income in old age without further burdening the public purse, but the authors of DEMHOW project argued that many EU member states do not have a legal framework that permits reverse

¹¹ Insured by the Federal Housing Administration, a branch of the US Department of Housing and Urban Development – HUD.

¹² Green Paper on Pensions, http://ec.europa.eu/internal_market/pensions/commission-docs_en.htm#2010greenpaper.

¹³DEMHOW (= Demographic Change and Housing Wealth), http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/302

mortgages, and that few EU member states have a market of a significant size. They saw advantages in an extended internal European market holding the potential to extend product availability, but mostly they thought that this is not an answer to the pension crisis. DEMHOW had evaluated the market exceedingly roughly and finally concluded that for many older inhabitants of European member states, home ownership already provides a means of living rent-free (income in kind), and they did not see how income in cash is needed for many elderly across Europe. The pattern of ownership is presented in Figure 1. They agreed that a reverse mortgage, whereby the capital tied up in homes is released and used to generate cash, could provide a substantial increase in disposable income for 75% or more old European inhabitants. The capital invested in their homes accounts for more than half of all personal wealth of European pensioners and other persons older than 65 years. Based on the findings of the DEMHOW project, the project coordinator Doling¹⁴ said, "wider access to reverse mortgage products would benefit many older people, but it is not a good substitute for social provision". However, in Slovenia the property of the elderly is becoming a direct substitute for social provision.

Figure 1: Share of residential units occupied by owners, by age, in Europe



¹⁴ J. Doling and R. Ronald, Property-based welfare and European homeowners: How would housing perform as a pension? J Hous. and the Built Environ 2010, pp.227–241.

Therefore, Anne-Sophie Parent, the Director of AGE Platform Europe also concluded: "The outcome of the DEMHOW project confirms that while easier and safer access to reverse mortgage might be welcome in some countries, forcing older people to release the equity tied in their homes to compensate for the decline in pension promise and increasing long-term care costs is not acceptable". But the Slovenian Act on Social Security Benefits is forcing the most vulnerable inhabitants of Slovenia to cover their living costs, including their long-term care costs, without allowing the better choices states with developed RM schemes can offer.

Giving the possibility to use this instrument for a better life to those old people who would like to use it could not be blocked by the above conclusion of AGE Platform Europe. We must create additional opportunities to give to the elderly a better life and develop all appropriate mechanisms to benefit from a reverse mortgage as much as possible. We should not force older people to release the equity tied up in their homes, as was done in Slovenia in the Law on Protecting Social Benefits which now regulates the right to social assistance and the right to a pension, but we should introduce additional opportunities that are as attractive to the elderly as possible to increase their quality of life and, through all activities which could support their higher consumption, improve the European economy.

We believe the best way to solve the problem of very low incomes in old age in an ageing Europe is to organise the reverse mortgage, which would cover the cases described above, although this instrument could also benefit other people who would like to increase their income after they retire and who own their home, and not only the poorest. This product would also be very needed in two other cases: (a) when supplementary pension funds do not allow workers to retire earlier even though they are employed in jobs where they are unable to work properly anymore; and (b) in general, when pension incomes are lowered because of pension reforms making superannuated persons unable to live according to their needs, and they own the property they live in, which could represent a source of income for a better life after retirement. Like in many other economic activities the organisational costs of managing equity release schemes depend on economies of scale. Therefore, the first question arises of how many potential clients we can expect will participate in reverse mortgage processes. This depends on: (a) the number of property owners living in their own homes who could be the subject of an equity release scheme; and (b) ageing of the population. Finally, it is apparent that the project would only be successful when the interest rate is low enough, as will be demonstrated in section 4.

3. European perspectives on the reverse mortgage

Population ageing is putting a greater stress on European welfare states.

Table 3: Potential pension power of housing in the EU-25 compared with Slovenia, where the home ownership rate is 84%, and at a 5% interest rate. (Source: Doling and Ronald (2008), and our own calculations)

	Home ownership rate (%)	Average income in cash as % of GDP per household	Average income in kind as % of GDP per household	Average total hous- ing income as % of GDP per house- hold	Home ownership rate index (index of Slovenia =100)	Average income in cash as % of GDP index (index of Slovenia =100)
Austria	58	11.7	9.3	21	69	36
Belgium	68	7.9	6.3	14.2	81	25
Denmark	53	10.7	8.5	19.2	63	33
Finland	63	9.9	7.9	17.8	75	31
France	56	13.6	10.9	24.5	67	42
Germany	45	10.4	8.4	18.8	54	32
Greece	74	28.3	22.6	50.9	88	88
Ireland	77	14.8	11.9	26.7	92	46
Italy	80	11.7	9.4	21.1	95	36
Luxembourg	67	5.9	4.8	10.7	80	18
Netherlands	55	15.3	12.2	27.5	65	48
Portugal	75	30.9	24.7	55.6	89	96
Spain	82	21.5	17.2	38.8	98	67
Sweden	46	12.5	10	22.5	55	39
UK	69	17.8	14.2	32	82	55
Cyprus	68	11.4	9.2	20.6	81	36

Czech R.	47	22.4	17.9	40.3	56	70
Estonia	85	16.9	13.5	30.4	101	53
Hungary	92	18.3	14.6	32.9	110	57
Latvia	79	4.8	3.9	8.7	94	15
Lithuania	91	35.3	28.3	63.6	108	110
Malta	70	13.1	10.5	23.6	83	41
Poland	58	30.4	24.3	54.8	69	95
Slovakia	74	34.1	27.3	61.4	88	106
Slovenia	84	32.1	25.7	57.8	100	100

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Fortunately, at the end of the last century there was an intensive and unexpected expansion of owner-occupied housing and a rapid increase in house prices across Europe. This expansion continued during the first eight years of the new millennium. The final result in terms of the share of homes with owner-occupiers is given in Table 3. In Slovenia, this expansion was underlined by 'Jazbinšek's Law' that gave inhabitants the possibility to buy their homes for extraordinarily low prices. This is the main reason that individual wealth held in housing equity, especially among older people, can be considered as a substantial inventory that can be converted into additional liquid income for those who need it. This potential with regard to GDP is presented in Table 3. Compared with the other EU-25 countries we have some of the greatest potential relative to GDP, as shown in the indexes in Table 3.

Home ownership across Europe constitutes an economic asset which by the start of the millennium had reached around €13 trillion in the 15 older member states, and around two trillion among the new member states that joined in 2004¹⁵. Across the EU-25 member states, housing equity was much higher than total GDP, especially in the newer member states. As shown in Figure 1, particularly high levels of housing wealth are found among the elderly. The calculations in Table 3 are based on a 5% interest rate for a reverse mortgage, which make the values lower.

If RM were available in all EU member states this housing wealth would constitute a potential reserve, complementary or supplementary to existing pension systems, with the potential po-

¹⁵ J. Doling and J. Ford, A union of home owners, editorial. European Journal of Housing and Planning, 2007), pp 113–127.

wer described in Table 3, but it also creates a political responsibility not to abuse the older population and, therefore the:

(a) the market price;

(b) organisational costs; and

(c) interest rate of the product

should be determined on a fair value basis.

While in Slovenia the home ownership rate is ranked just behind Hungary, Lithuania and Estonia, the average income in cash as a % of GDP index is only higher in Lithuania and Slovakia. The relative contribution of housing income is particularly significant in the newer member states (see indexes). According to the EC¹⁶, a higher ownership rate is found among countries with a higher poverty potential among inhabitants older than 64 years¹⁷.

4. The Slovenian perspectives on the reverse mortgage

The Slovenian population has been ageing very rapidly, as presented in Table 4.

Table 4: Share of the population in Slovenian census reports according to age groups and ageing index (1869-2008)

	<u> </u>	<u> </u>							
		Age groups							
year	0-14	15-64	65+	index					
1869	32.9	62.1	5.0	15.2					
1910	34.8	58.5	6.7	19.3					
1931	30.5	62.5	7.0	23.0					
1953	27.7	65	7.3	26.4					
1991	20.8	68	11.2	53.1					
2002	15.3	70	14.7	96.3					
2008	14.0	69.6	16.4	117.1					

Source: SURS, 2011

There is little chance that the elderly in Slovenia will be able to extract liquidity and finance improvements to their dwellings according to their needs in specific central places on the

¹⁶ European Commission, Adequate and sustainable pensions. Synthesis report, Directorate General For Employment, Social Affairs and Equal Opportunities, 2006.

¹⁷ See Table 3 where the poverty level determined statistically is higher than in Slovenia – higher than 19%, where the values are written in bold.

NUTS-3 level, without introducing a legal framework for reverse mortgages which protects the elderly and their most valuable asset. Table 5 presents the ageing structure of dwellings in NUTS-3 regions in Slovenia in 2009 according to the year of construction.

Table 5: Num	ber of dwellings in NUTS-3 regions in Slovenia in
2009 by year	of construction
Regions	Year of construction

Regions		Year of construction									
	Total	Before	1919	1946	1961	1971	1981	1991	2001		
		1918	- 1945	- 1960	- 1970	- 1980	- 1990	- 2000	- 2009		
SLOVENIA	838,252	119,817	61,332	87,871	132,364	185,340	127,494	54,946	69,088		
Pomurska	48,439	5,181	4,174	5,919	7,662	11,201	7,833	3.502	2.967		
Podravska	137,184	20,163	9,760	13,914	21,919	28,303	20,301	9,664	13,160		
Koroška	28,325	3,798	1,363	3,512	4,584	6,177	4,661	2,080	2,150		
Savinjska	102,445	15,271	5,501	11,472	15,698	25,002	15,912	7,138	6,451		
Zasavska	18,748	2,534	1,675	3,624	3,150	3,274	3,149	735	607		
Spodnjeposavska	29,773	3,794	2,122	3,977	4,368	6,683	5,120	2069	1,640		
Jugovzhodna	59,120	8,348	3,963	6,514	8,554	13,502	9,753	4,508	3,978		
Slovenija											
Osrednjeslovenska	211,164	22,517	16,355	20,102	39,353	48,131	31,199	13,558	19,949		
Gorenjska	80,929	10,363	6,326	9,465	13,615	17,331	12,588	4,372	6,869		
Notranjsko-kraška	21,594	4,902	1,766	2,175	2,646	4,113	3,224	1,188	1,580		
Goriška	50,904	10,891	5,934	4,106	5,610	11,250	6,067	2,982	4,064		
Obalno-kraška	49,627	12,055	2,393	3,091	5,205	10,373	7,687	3,150	5,673		

Source: Statistical Office of the Republic of Slovenia

There were 838,252 residential units at the end of 2009 in Slovenia in almost 500,000 buildings. Since the end of 2009, that number has grown by more than 33,600. The average size of a single residential unit was a little less than 80 m². More than half of these residential units are located in urban agglomerations, and the average size of a single residential unit in an urban agglomeration was around 70 m2. Residential units are mostly in a satisfactory condition and around 80% of them have central heating, which increases their value. Figure 6 presents the prices of residential units in 2010. These prices have, on average, not been rising in the last months.





⁽Source: GURS, 2011)

If we take into consideration that the ratio of owner-occupiers aged between 30-64 years and the age group 65 or older is 3:7, as it is shown roughly in Figure 1 for the entire Europe, then we can calculate the share of the housing stock that belongs to elderly citizens 65 years and older on average. In Slovenia, we obtain a figure of 43% (= 0.7x338,265 / (0.3x(1,372,208-338,265) + 0.7x338,265)) from where it follows that the value of housing stock from which elderly citizens could draw ready cash to finance their living costs is around €47 billion or €140,000 per person.

REGIONS NUTS-3 level	No. of inhabitants		Value per older t	inhabitant han 64	% in ownership of inhabitants older than 64 years	Total value of homes owned by inhabitants older than 64 years
	All	More than	Min: A	Max: B	С	(10 ⁹ €)
	inhabitants	64 years old	(€/inhab.)	(€/inhab.)		
SLOVENIA	2 046 976	338 265	79 434	322 233	43	47.2
Pomurska	119 548	20 725	48 212	193 004	44	1.7
Podravska	323 343	55 861	67 887	268 524	44	6.6
Koroška	72 812	11 705	40 733	170 867	42	0.8
Savinjska	260 025	41 211	63 385	266 919	42	4.6
Zasavska	44 706	7 994	32 627	125 094	45	0.5
Spodnjeposavska	70 192	11 973	62 974	250 564	44	1.3

Table 6: Estimate of housing fund by regions (NUTS-3) owned by residents older than 64 years (according to prices in 2010)

Jugovzhodna Slovenija	142 092	22 187	53 995	225 357	42	2.1
Osrednjeslovenska	529 646	83 548	103 830	430 890	43	15.3
Gorenjska	202 903	33 729	90 099	355 777	44	5.3
Notranjsko-kraška	52 217	8 955	56 575	223 339	44	0.9
Goriška	119 080	21 520	97 123	371 747	45	3.6
Obalno-kraška	110 412	18 857	129 666	530 307	43	4.3

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Sources: SURS, GURS and the author's own calculations

The value of the housing stock is unevenly distributed by region in such a way that the Osrednjeslovenska region holds one-third of the housing stock by value (€15.3 billion or almost €183,000 per elderly citizen), while the Zasavska region holds only €0.5 billion worth of housing stock or a little over €62,000 per elderly citizen. Nevertheless, this is a valuable asset of elderly citizens that could provide liquid funds able to substantially increase the quality of life in retirement.

Table 7: Dynamics of a reverse mortgage income calculated on the basis of a 3.5% interest rate on an outstanding loan and a 3.5% discount rate embedded in a lifetime annuity premium, and mortality tables valid in Slovenia with the following parameters:

(a) the age of a residential property owner when entering into a reverse mortgage contract is 65 years;

(b) the value of a property is constant at $\in 160,000$;

(c) the discount rate used by an insurance company for calculating the annuity premium is 3.5%;

(d) the mortality tables used to calculate an annuity premium are the same as those prescribed by the Slovenian Agency for Insurance Supervision for calculating mathematical reserves (DAV 1994 R);

(e) administrative costs for payment processing and disbursement are calculated at 5% of the premium and annuity amount accordingly; and

(f) the interest rate on an outstanding loan charged by a financial institution is 3.5%

								(in EUR)
Year	Closing	Drawing	A(y)+	Interest	Accumulated	Annuity	Accounting	yearly
	costs	amount	B(y)+	amount	debt	premium	costs	disbursement
			D(y-1)	3.50%	C(y)+D(y)			equal to 288
У	Α	В	С	D	E			EUR per month
1	3,200.00	6,524.98	9,724.98	340.37	10,065.35	2,948.98	120.00	3,456.00
2		6,524.98	16,590.33	580.66	17,170.99	2,948.98	120.00	3,456.00
3		6,524.98	23,695.97	829.36	24,525.33	2,948.98	120.00	3,456.00
4		6,524.98	31,050.31	1,086.76	32,137.07	2,948.98	120.00	3,456.00
5		6,524.98	38,662.05	1,353.17	40,015.22	2,948.98	120.00	3,456.00
6		6,524.98	46,540.20	1,628.91	48,169.11	2,948.98	120.00	3,456.00
7		6,524.98	54,694.08	1,914.29	56,608.38	2,948.98	120.00	3,456.00
8		6,524.98	63,133.36	2,209.67	65,343.02	2,948.98	120.00	3,456.00
9		6,524.98	71,868.00	2,515.38	74,383.38	2,948.98	120.00	3,456.00
10		6,524.98	80,908.36	2,831.79	83,740.15	2,948.98	120.00	3,456.00
11		6,524.98	90,265.13	3,159.28	93,424.41	2,948.98	120.00	3,456.00
12		6,524.98	99,949.39	3,498.23	103,447.62	2,948.98	120.00	3,456.00
13		6,524.98	109,972.60	3,849.04	113,821.64	2,948.98	120.00	3,456.00
14		6,524.98	120,346.62	4,212.13	124,558.75	2,948.98	120.00	3,456.00
15		6,524.98	131,083.73	4,587.93	135,671.66	2,948.98	120.00	3,456.00
16		6,524.98	142,196.63	4,976.88	147,173.52	2,948.98	120.00	3,456.00
	3,200.00			39,573.86		47,183.66	1,920.00	55,296.00
Selling cost of property at death of owner					12,826.48			
Realised p	roperty value	at death of	owner		160,000.00			

Of course, these are rough approximations because there is significant variability in the market prices of residential units which depend on many factors considered by location theory. Location also needs to be considered in detail for Slovenia. Breaking down Slovenia into assessment areas¹⁸ is not precise enough to assess the real estate owned by individual retirees. Yet it is sufficient for us to make a decision regarding the merits of developing a reverse mortgage financing system in Slovenia.

The total value of home ownership is not the only value which has to be estimated when making the final decision about reverse mortgage in a region. The monthly income of inhabitants also depends on the interest rate and operational costs of the organisation offering a reverse mortgage. Table 7 presents the monthly amount calculated on the basis of different interest rates and mortality tables that are valid in Slovenia today.

In the case of a residential property value of €160,000, which is not growing over the time horizon of the owner's life span all the costs associated with entering into a reverse mortgage contract (brokerage fee, assessment fee, notary fee and other administrative costs) are 2% (€3,200.00). The yearly amount drawn from the residential real estate equity equals €6,524.98. This amount is then divided into three parts: €120.00 covers the administrative fee for maintaining a reverse mortgage account with a financial institu-

¹⁸ GURS (= Geodetska uprava Republike Slovenije), http://prostor3.gov.si/zvn/

tion, ϵ 2,948.98 is used for purchasing the annuity premium that covers the annuities after exhausting all the equity in the residential real estate property (in case the real estate owner lives longer than expected). The yearly amount of ϵ 3,456.00 is disbursed to the property owner who is staying in his property until the end of his life in any case. At the end of his life the costs of refurbishing and selling the property are covered by the remaining ϵ 12,826.48. After refurbishing, the house is sold for ϵ 160,000.00 which was also the estimated price at the beginning of the time horizon of our simulation.

Table 8: Dynamics of a reverse mortgage income calculated on the basis of a 1.5% interest rate on an outstanding loan and a 3.5% discount rate embedded in the lifetime annuity premium, and mortality tables valid in Slovenia with the following parameters:

(a) the age of a residential property owner when entering into a reverse mortgage contract is 65 years;

(b) the value of a property is constant at \in 160,000;

(c) the discount rate used by an insurance company for calculating the annuity premium is 3.5%;

(d) the mortality tables used to calculate an annuity premium are the same as those prescribed by the Slovenian Agency for Insurance Supervision for calculating mathematical reserves (DAV 1994 R);

(e) administrative costs for payment processing and disbursement are calculated at 5% of the premium and annuity amount accordingly; and

(f) the interest rate on an outstanding loan charged by a financial institution is 1.5%.

								(IN EUR)
Year	Closing	Drawing	A (y)+	Interest	Accumulated	Annuity	Accounting	yearly
	costs	amount	B(y)+	amount	debt	premium	costs	disbursement
			D(y-1)	1.50%	C(y)+D(y)			equal to 400
у	Α	В	С	D	E			EUR per month
1	3,200.00	8,322.70	11,522.70	172.84	11,695.54	3,402.70	120.00	4,800.00
2		8,322.70	20,018.24	300.27	20,318.52	3,402.70	120.00	4,800.00
3		8,322.70	28,641.22	429.62	29,070.84	3,402.70	120.00	4,800.00
4		8,322.70	37,393.54	560.90	37,954.44	3,402.70	120.00	4,800.00
5		8,322.70	46,277.14	694.16	46,971.30	3,402.70	120.00	4,800.00
6		8,322.70	55,294.00	829.41	56,123.41	3,402.70	120.00	4,800.00
7		8,322.70	64,446.11	966.69	65,412.80	3,402.70	120.00	4,800.00
8		8,322.70	73,735.51	1,106.03	74,841.54	3,402.70	120.00	4,800.00
9		8,322.70	83,164.24	1,247.46	84,411.70	3,402.70	120.00	4,800.00
10		8,322.70	92,734.41	1,391.02	94,125.42	3,402.70	120.00	4,800.00
11		8,322.70	102,448.12	1,536.72	103,984.84	3,402.70	120.00	4,800.00
12		8,322.70	112,307.55	1,684.61	113,992.16	3,402.70	120.00	4,800.00
13		8,322.70	122,314.86	1,834.72	124,149.58	3,402.70	120.00	4,800.00
14		8,322.70	132,472.29	1,987.08	134,459.37	3,402.70	120.00	4,800.00
15		8,322.70	142,782.07	2,141.73	144,923.80	3,402.70	120.00	4,800.00
16		8,322.70	153,246.50	2,298.70	155,545.20	3,402.70	120.00	4,800.00
	3,200.00			19,181.98		54,443.22	1,920.00	76,800.00
Selling cost of property at death of owner				4,454.80				
Realised p	roperty value	e at death of	owner		160,000.00			

Table 8 shows what happens when the financial institution is able to lower the interest rate on the outstanding loan from 3.5% to 1.5% for a residential property value of €160,000. In this case, the yearly amount drawn from the residential real estate increases from €6,524.98 to €8,322.70. This amount is then divided into three parts: €120.00 covers the administrative fee for maintaining a reverse mortgage account with a financial institution, the amount used for purchasing the annuity premium that covers the annuities after exhausting all the equity in the residential real estate property rises to €3,402.70 and the yearly amount of €4,800.00 is disbursed to the property owner who is staying in his property till the end of his life in any case. For ease of calculation, at the end of his life the costs of refurbishing and selling the property are covered by the remaining €4,454.80. After refurbishing, the house is sold for €160,000.00 as shown in Table 7.

Table 9: Dynamics of a reverse mortgage income calculated on the basis of a 1.5% interest rate and mortality tables valid in Slovenia with the following parameters:

(a) the age of a residential property owner when entering into a reverse mortgage contract is 65 years;

(b) the value of a property is constant at $\pounds 267,000$;

(c) the discount rate used for calculating the annuity premium is 3.5%;

(d) the mortality tables used to calculate an annuity premium are the same as those prescribed by the Slovenian Agency for Insurance Supervision for calculating mathematical reserves (DAV 1994 R); and

(e) administrative costs for payment processing and disbursement are calculated at 5% of the premium and annuity amount accordingly.

								(in EUR)
Year	Closing	Drawing	A (y)+	Interest	Accumulated	Annuity	Accounting	yearly
	costs	amount	B(y)+	amount	debt	premium	costs	disbursement
			D(y-1)	1.50%	C(y)+D(y)			equal to 750
у	Α	В	С	D	E			EUR per month
1	3,200.00	13,940.59	17,140.59	257.11	17,397.69	4,820.59	120.00	9,000.00
2		13,940.59	31,338.28	470.07	31,808.35	4,820.59	120.00	9,000.00
3		13,940.59	45,748.94	686.23	46,435.17	4,820.59	120.00	9,000.00
4		13,940.59	60,375.76	905.64	61,281.40	4,820.59	120.00	9,000.00
5		13,940.59	75,221.98	1,128.33	76,350.31	4,820.59	120.00	9,000.00
6		13,940.59	90,290.90	1,354.36	91,645.26	4,820.59	120.00	9,000.00
7		13,940.59	105,585.85	1,583.79	107,169.64	4,820.59	120.00	9,000.00
8		13,940.59	121,110.22	1,816.65	122,926.87	4,820.59	120.00	9,000.00
9		13,940.59	136,867.46	2,053.01	138,920.47	4,820.59	120.00	9,000.00
10		13,940.59	152,861.06	2,292.92	155,153.97	4,820.59	120.00	9,000.00
11		13,940.59	169,094.56	2,536.42	171,630.98	4,820.59	120.00	9,000.00
12		13,940.59	185,571.56	2,783.57	188,355.14	4,820.59	120.00	9,000.00
13		13,940.59	202,295.72	3,034.44	205,330.16	4,820.59	120.00	9,000.00
14		13,940.59	219,270.75	3,289.06	222,559.81	4,820.59	120.00	9,000.00
15		13,940.59	236,500.39	3,547.51	240,047.90	4,820.59	120.00	9,000.00
16		13,940.59	253,988.48	3,809.83	257,798.31	4,820.59	120.00	9,000.00
	3,200.00			31,548.94		77,129.37	1,920.00	144,000.00
Selling cost of property at death of owner				9,201.69				
Realised p	roperty value	at death of	owner		267,000.00			

The yearly income also increases or decreases when the value of the property rises or falls, but not strictly proportionally if the other (operating) costs are not proportional.

Table 9 shows what happens in the case of a median value home in the Osrednjeslovenska region.

We can see that in the case of the value of a residential property growing to 1.67x€160,000 (from €160,000 to €267,000), when the interest rate on an outstanding loan decreases (from 3.5% to 1.5%), with all costs associated with entering into the reverse mortgage contract (brokerage fee, assessment fee, notary fee and other administrative costs) staying the same as in Table 7 (\in 3,200.00), the yearly amount drawn from the residential real estate equity more than doubles (from $\notin 6,524.98$ to $\notin 13,940.59$). As in Table 7, this amount is then divided into three parts: €120.00 (as before) covers the administrative fee for maintaining a reverse mortgage account with a financial institution. Instead of €2,948.98, the amount of \notin 4,820.59 is used for purchasing the annuity premium. The yearly amount of €9,000 (which is 2.6 times the value in Table 7) is then disbursed to the property owner who is staying in his property till the end of his life in any case with a 2.6 times higher income from this property. At the end of his life, the costs of refurbishing and selling the property are covered by the remaining $\notin 9,201.69$.

Table 10: Dynamics of a reverse mortgage income calculated on the basis of a 3.5% interest rate on an outstanding loan and a 3.5% discount rate embedded in a lifetime annuity premium, and mortality tables valid in Slovenia with the following parameters:

(a) the age of a residential property owner when entering into a reverse mortgage contract is 70 years;

(b) the value of a property is constant at €160,000;

(c) the discount rate used by an insurance company for calculating the annuity premium is 3.5%;

(d) the mortality tables used to calculate an annuity premium are the same as those prescribed by the Slovenian Agency for Insurance Supervision for calculating mathematical reserves (DAV 1994 R);

(e) administrative costs for payment processing and disbursement are calculated at 5% of the premium and annuity amount accordingly; and

(f) the interest rate on an outstanding loan charged by a financial institution is 3.5%.

								(in EUR)
Year	Closing	Drawing	A(y)+	Interest	Accumulated	Annuity	Accounting	yearly
	costs	amount	B(y)+	amount	debt	premium	costs	disbursement
			D(y-1)	3.50%	C(y)+D(y)			equal to 380
У	Α	В	С	D	E			EUR per month
1	3,200.00	8,794.17	11,994.17	419.80	12,413.97	4,114.17	120.00	4,560.00
2		8,794.17	21,208.13	742.28	21,950.42	4,114.17	120.00	4,560.00
3		8,794.17	30,744.59	1,076.06	31,820.65	4,114.17	120.00	4,560.00
4		8,794.17	40,614.82	1,421.52	42,036.34	4,114.17	120.00	4,560.00
5		8,794.17	50,830.51	1,779.07	52,609.57	4,114.17	120.00	4,560.00
6		8,794.17	61,403.74	2,149.13	63,552.87	4,114.17	120.00	4,560.00
7		8,794.17	72,347.04	2,532.15	74,879.19	4,114.17	120.00	4,560.00
8		8,794.17	83,673.36	2,928.57	86,601.93	4,114.17	120.00	4,560.00
9		8,794.17	95,396.10	3,338.86	98,734.96	4,114.17	120.00	4,560.00
10		8,794.17	107,529.13	3,763.52	111,292.65	4,114.17	120.00	4,560.00
11		8,794.17	120,086.82	4,203.04	124,289.86	4,114.17	120.00	4,560.00
12		8,794.17	133,084.03	4,657.94	137,741.97	4,114.17	120.00	4,560.00
13		8,794.17	146,536.14	5,128.76	151,664.90	4,114.17	120.00	4,560.00
	3,200.00			34,140.70		53,484.20	1,560.00	59,280.00
Selling cost of property at death of owner					8,335.10			
Realised p	roperty value	at death of	owner		160,000.00			

If the age of a residential property owner upon entering the reverse mortgage contract increases from 65 to 70 years and all the other data are the same as in Table 7, the life expectancy is three years shorter according to the German mortality tables used in Slovenia. The yearly amount drawn from the residential real estate equity rises from €6,524.98 to €8,794.17. This amount is once more then divided into three parts: again €120.00 covers the administrative fee for maintaining a reverse mortgage account with a financial institution, for purchasing the annuity premium that covers the annuities after exhausting all the equity in the residential real estate property the amount increases €2,948.98 to €4,114.17. In this case, the yearly amount disbursed to the property owner goes up from $\notin 3,456$ to $\notin 4,560$. At the end of his life, the costs of refurbishing and selling the property are covered by the remaining €8.335,10. After refurbishing, the house is supposed to be sold for €160,000.00 which was also the estimated price at the beginning of the time horizon of our simulation.

Table 11: Dynamics of a reverse mortgage income calculated on the basis of a 1.5% interest rate on an outstanding loan and a 3.5% discount rate embedded in a lifetime annuity premium, and mortality tables valid in Slovenia with the following parameters:

(a) the age of a residential property owner when entering into a reverse mortgage contract is 70 years;

(b) the value of a property is constant at $\in 160,000$;

(c) the discount rate used by an insurance company for calculating the annuity premium is 3.5%;

(d) the mortality tables used to calculate an annuity premium are the same as those prescribed by the Slovenian Agency for Insurance Supervision for calculating mathematical reserves (DAV 1994 R);

(e) administrative costs for payment processing and disbursement are calculated at 5% of the premium and annuity amount accordingly; and

(f) the interest rate on an outstanding loan charged by a financial institution is 1.5%.

								(in EUR)
Year	Closing	Drawing	A (y)+	Interest	Accumulated	Annuity	Accounting	yearly
	costs	amount	B(y)+	amount	debt	premium	costs	disbursement
			D(y-1)	1.50%	C(y)+D(y)			equal to 465
У	A	В	С	D	E			EUR per month
1	3,200.00	10,216.98	13,416.98	201.25	13,618.23	4,516.98	120.00	5,580.00
2		10,216.98	23,835.21	357.53	24,192.74	4,516.98	120.00	5,580.00
3		10,216.98	34,409.71	516.15	34,925.86	4,516.98	120.00	5,580.00
4		10,216.98	45,142.84	677.14	45,819.98	4,516.98	120.00	5,580.00
5		10,216.98	56,036.95	840.55	56,877.51	4,516.98	120.00	5,580.00
6		10,216.98	67,094.49	1,006.42	68,100.90	4,516.98	120.00	5,580.00
7		10,216.98	78,317.88	1,174.77	79,492.65	4,516.98	120.00	5,580.00
8		10,216.98	89,709.62	1,345.64	91,055.27	4,516.98	120.00	5,580.00
9		10,216.98	101,272.25	1,519.08	102,791.33	4,516.98	120.00	5,580.00
10		10,216.98	113,008.31	1,695.12	114,703.43	4,516.98	120.00	5,580.00
11		10,216.98	124,920.41	1,873.81	126,794.21	4,516.98	120.00	5,580.00
12		10,216.98	137,011.19	2,055.17	139,066.36	4,516.98	120.00	5,580.00
13		10,216.98	149,283.33	2,239.25	151,522.58	4,516.98	120.00	5,580.00
	3,200.00			15,501.89		58,720.70	1,560.00	72,540.00
Selling cost of property at death of owner					8,477.42			
Realised property value at death of owner					160,000.00			

If the age of a residential property owner upon entering into a reverse mortgage contract increases from 65 to 70 years and all the other data are the same as in Table 7, except for the interest rate on an outstanding loan which decreases from 3.5% to 1.5%, the yearly amount drawn from the residential real estate equity rises from €6,524.98 to €10,216.98. This amount is then divided into three parts. In this case, the yearly amount disbursed to the property owner increases from €3,456 to €5,580. At the end of his life, the costs of refurbishing and selling the property are covered by nearly the same remaining amount as in the previous case. €5,580 tax-free is an amount which is close to the poverty line.

Tables 7 to 10 demonstrate the importance of:

(a) interest rates charged on the outstanding loan;

(b) the estimated future fair value of residential real estate;

(c) the operational costs; and

(d)the age of the residential property owner when entering into the reverse mortgage contract

for the amount available for disbursement to the residential

property owner. In these calculations we have used German annuity mortality tables (DAV 1994 R) which, according to officially published Slovenian mortality tables, substantially underestimate mortality. Using Slovenian mortality tables the income would be much higher. Further studies are needed to examine how the mortality of the population influences these calculations and what is the risk hidden in these tables.

5. Conclusions

We have based our study on the evidence that both the European and Slovenian populations are rapidly ageing. This has an influence on the everyday lives of citizens. This is also one of the reasons that the number of Slovenian citizens living below the poverty line is increasing. With rising life expectancy, the share of social transfers in the public budget allocated to the provision of social security in old age is rising. In order to maintain a vital society of inhabitants who are proud to have lived a long life, it is necessary to develop new economic and social institutions to remedy the social conditions that are consequences of the ageing of society.

In the European Union, member states are responsible for the planning, funding and administration of social protection systems for the ageing population. To support member states in their reform efforts, the European Union recommends three long-term objectives, which should be pursued simultaneously:

(a) ensure good access to health care and social services;

(b) improve the quality of care; and

(c) ensure the sustainability of the financing.

In this context, how to guarantee the sustainable financing of the elderly is a crucial question.

Slovenia belongs to a group of European countries that joined the EU in 2004 (newer member states). Before then the country had experienced several decades under communist systems; therefore, both our housing and pension systems are undergoing transition processes: from the higher percentage of home ownership to property taxes, from a pay-as-you-go system of pensions to founded approaches. Even though our state pension systems do not make as large a contribution to the incomes of the elderly, the risk of poverty is almost as low as it is in some EU-15 countries. A notable feature of transition economies is the exceptionally high home ownership rates among older people and the comparatively low level of net pension incomes.

Due to the rising cost of social security provision the Slovenian government has decided that only people without their own real estate and without sufficient means to cover their basic living expenses in old age are entitled to social security benefits. The amount of benefit equals half the amount which represents the poverty line in Slovenia. The Act on Social Security Benefits determines that all social security transfers are a kind of loans to property holders. The state has the right, upon the issue of a written order, to mortgage the real estate property of the beneficiary. The Act also enables the government to stop a beneficiary selling or in any other way alienating their property. In this case, the income of poor inhabitants is just half of the income level representing the poverty line, and they have no possibilities to bring it up to at least the poverty line. In the paper, we argue that this Act is inequitable to property holders because the values of the transfers are not actuarially fair as they are not evaluated according to the age of a beneficiary when he/she accept these contributions, and the value of the real property they hold is not fairly estimated. The Act on Social Security Benefits reduces the mobility of the beneficiary and exposes their estate to the risk of losing value due to a forced sale of real estate in the illiquid Slovenian market after their death. The paper gives an insight into the financial mechanism of reverse mortgage products and shows how the introduction of a reverse mortgage as a financial instrument in the Slovenian legal system could improve the social security of the inhabitants. We have seen that a reverse mortgage could improve the quality of life of the elderly depending on some factors like:

(a) the interest rates charged on the outstanding loan;

(b) the estimated future fair value of the residential real estate;

(c) the operational costs; and

(d)the age of the residential property owner when entering the reverse mortgage contract.

We are convinced that this financial instrument should be kept under public control. Reverse mortgages allow older homeowners to borrow against the value of their property so as to increase their income, but they can risk losing their homes when they sign up for reverse mortgages if they do not receive proper

advice. Mortgage brokers could encourage the elderly to take out loans for more than they need in a particular situation. Drawing the maximum amount from an equity release product could constrain the financial circumstances of the elderly later on in the retirement period when they might need to enter a nursing home. It could also happen that later they will need to invest some capital in remodelling their home because of impaired mobility, or when the retiree might need to pay for expensive medical care. A reverse mortgage, which is often considered as "spending the kids' inheritance", should be understood as complementary spending money of the elderly. Therefore, each region at the NUTS-3 level needs to establish a Council on Ageing consisting of branches from each municipal unit on the NUTS-5 level as a regional policy arm of the region, that focusses on national policy issues from the perspective of the elderly and seeks to promote, improve and protect the circumstances and wellbeing of older people in towns and surroundings. They are able to influence an evaluation of the fair value of a property, and the determination of the interest rate embedded in reverse mortgage products.

It is important to educate the elderly about the advantages and disadvantages of the proposed product according to different parameters introduced into the financial scheme of a reverse mortgage. Reverse mortgage products have the ability to enhance the quality of life, but many parameters of this instrument have to be decided by the elderly home owner, which is not an easy job without proper education. Finally, it is the property owner's decision as to how much equity he will spend by himself, and how much equity he will leave in his estate.

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