

To What Degree Can the Effects of Reverse Mortgages Be Anticipated?

Declining social insurance benefit expenses and anticipation of reverse mortgages

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Social insurance reforms that have been instituted in rapid succession in recent years have established a common orientation of reduced benefits instead of rising insurance premiums. For example, in medical system reforms carried out over the past two years, insurance benefit expenses were practically reduced by, for example, an increase in insured copayments and a higher eligibility age for Elderly Health Insurance benefits. In addition, with the pension reform bill passed this year, the substitution rate, which is currently set at 59.4%, will be lowered to 50.2% and there is the possibility of further reductions depending on the future course of macroeconomic adjustments. Furthermore, in the reform of long-term nursing insurance currently being discussed, a reduction in benefits is being examined for recipients with a low level of required assistance or required nursing care. In the background is a sense of crisis that, though there have been continuous increases in insurance premiums thus far, the level that can be endured by the current working generation is gradually reaching the limit. Furthermore, in addition to reforms in individual fields, the assertion that comprehensive social security reforms should be carried out with set limits on overall social insurance expenses is rapidly gaining support.

Meanwhile, in addition to public social security, it will be necessary for the elderly in the future to secure their own self-security by paying the costs on their own. The reverse mortgage system has therefore again become a focus of attention in recent years as the source of underlying assets for self-security. The government also states that “it will promote the development of an environment for providing means (reverse mortgages, etc.) for covering post-retirement livelihood funding utilizing assets in the possession of the elderly” in the “Basic Policy for Future Economic and Fiscal Management and Economic and Social Structural Reform (cabinet decision, June 26, 2001), while lively discussions are being conducted by the Cabinet Office as well as symposia and study groups.

To what extent can reverse mortgages be utilized?

The basic concept of reverse mortgages is a home loan in reverse and it is a system in which livelihood funds are borrowed using owned homes as collateral. In

addition to this, like lifelong pensions, it also has a mechanism for assuring a fixed income after borrowing beyond the value of the home collateral. After the introduction of this system by the city of Musashino in 1981, moves have been apparent in Japan toward the utilization of this system especially by local governments, trust banks and other organizations. Since home value surged in particular during the bubble period, they were offered by trust banks as a way of avoiding high transfer taxes while also using the home as a source of cash while continuing to reside in the home; however, utilization has declined since the collapse of the bubble along with the drop in the value of real estate used as collateral and, in recent years, the number of contracts has been stagnant. In addition, in terms of research, much research was conducted during the bubble period but that has also dissipated in recent years.

Thus, in this study, I am reexamining the degree to which the utilization of reverse mortgages can currently be anticipated using methods carried out during the bubble period^{*1}.

Table 1 shows the conditions of ownership of residence and residential land assets of household heads aged 70 or higher based on the National Survey of Family Income and Expenditure of 1999. Household heads aged 70 or higher have an average of ¥47.65 million in residence and residential land assets and only 10% of total households have no residence-related asset holdings. It can therefore be understood that there is mounting anticipation for the utilization of residential assets.

Unit: ¥1, 000

	Ratio	Annual income	Annual consumption	Net savings	Value of residence and residential land assets
Average	1	5,530	3,106	20,517	47,650
¥50 million and up	0.28	7,429	3,646	28,440	117,809
¥30-50 million	0.20	5,457	3,152	22,976	38,688
¥10-30 million	0.33	4,864	2,928	17,524	19,773
Less than ¥10 million	0.09	4,095	2,478	11,629	6,570
No residence-related assets	0.10	3,895	2,671	11,566	0

Ministry of Public Management, Home Affairs, Posts and Telecommunications,
National Survey of Family Income and Expenditure, 1999

^{*1} Y. Noguchi, H. Yoshida, M. Tamura (1993) "Post-retirement Livelihood Security of the Elderly Utilizing Residence-related Assets," Social Security Research Quarterly, Vol. 29, No. 1, pp. 46-53
Venti, Steve F., and Wise, David A., "Aging and Income Value of Housing Wealth," Journal of Public Economics, Vol.44, No.3, pp.371-397

Table 1 Attributes by level of residence and residential land assets (age 70-79)

Nevertheless, unlike the bubble period, land prices are currently in a downturn phase and there is the possibility that the amount of benefits paid every year through the utilization of reverse mortgages is not as great as during the bubble period. I thus carried out a simple trial calculation using the following technique.

(1) First of all, the value of collateral real estate of a beneficiary aged “a” at the age of “t” is expressed by the following equation.

$$(1+g)^{t-a} H_a \quad \text{“g”} = \text{rate of increase (decrease) of residential assets}$$

(2) The real estate value repaid to financial institutions every year is expressed by the following equation.

$$[(1+g)^{t-a} H_a] d(t,a) \quad \text{“d(t, a)”} = \text{probability of death at “t” age}$$

(3) A calculation of current value of collateral residential assets of (1) and (2) yields L.

$$L = \sum_{t=a}^A [(1+g)^{t-a} H_a] d(t,a) (1+m)^{-(t-a)}$$

“m” = discount rate (home loan, mortgage market rate)

(4) Meanwhile, if the amount of annual benefits is “P”, the discounted present value of the amount required for lifelong benefits beginning at age “a” is determined by the following equation.

$$\sum_{t=a}^A [P] l(t,a) (1+r)^{-(t-a)}$$

l(t,a) = survival probability at age “t”, r = personal pension yield

(5) $L = (P)$ based on the principle of insurance balance equality. Therefore, the following equation is established for the amount of benefits.

$$P = \frac{\sum_{t=a}^A [(1+g)^{t-a} H_a] d(t,a) (1+m)^{-(t-a)}}{\sum_{t=a}^A l(t,a) (1+r)^{-(t-a)}}$$

(6) Here, the following values are assigned as the conjectured values.

- * l(a,t) d(a,t) is calculated based on the 2002 simple life table.
- * g = -2.5% (improved economic conditions in 1996)
- * m = 3% (10-year fixed home loan)
- * r = 2%
- * Collateral assessment rate: 50%
- * Annual benefits are received from the age of 70

Annual reverse mortgage benefits calculated in this manner are as indicated in Table 2. On average, they amount to about ¥1.4 million per year and are about one-fourth of total household income. The income ratio of households even with the highest level of residence and residential land assets of ¥50 million or more is about 47%, less than one half. Given the fact that the ratio was more than twice that on average in Noguchi, Yoshida and Tamura’s calculation during the bubble period (1993),

that gives a good idea of how greatly the times have changed. Therefore, there is little likelihood that the utilization of the reverse mortgages currently being offered will serve as the savior in social security reform and probably should not be looked upon with excessive anticipation.

Table 2 Pension benefits through the utilization of reverse mortgages (results of household heads aged 70-79)

Unit: ¥1,000

	Ratio	Reverse mortgage benefits (annual)	Consumption ratio	Income ratio
Average	1	1,401	0.45	0.253
¥50 million and up	0.28	3,464	0.95	0.466
¥30-50 million	0.20	1,138	0.36	0.208
¥10-30 million	0.33	581	0.20	0.120
Less than ¥10 million	0.09	193	0.08	0.047
No residence-related assets	0.10	0	0.00	0.000

Ministry of Public Management, Home Affairs, Posts and Telecommunications, National Survey of Family Income and Expenditure, 1999