The Nonpayment of National Pension Premiums—An Analysis of Subjective Factors

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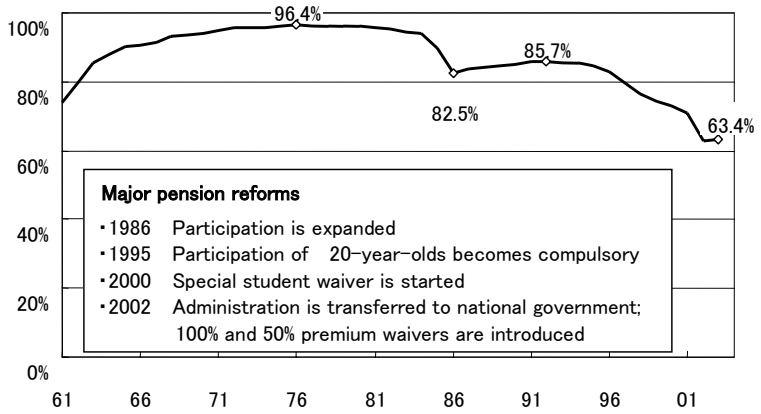
1. The Abysmal Premium Payment Rate

The nonpayment of national pension premiums remains a persistent problem. The premium payment rate[1] fell to 62.8% in fiscal 2002 due in part to the administrative transfer from local to national governments, and stricter rules on the full premium waiver for low-income earners. Despite edging up to 63.4% in fiscal 2003, it is not expected to continue improving in fiscal 2004.[2]

Figure 1 Payment Rate of the National Pension Premium



Sources: NLI Research Institute

Talk of reforming the Social Insurance Agency (SIA)—the agency that collects pension premiums—has progressed in recent Diet debate on pension reform, and continues to unfold in the Council of Advisors for Improvement of the Social Insurance Agency. Unfortunately, debate in the panel, government and ruling coalition has focused on organizational reforms—whether to retain the SIA as an agency outside the MHLW or create an independent administrative corporation, and whether to separate the administration of pension insurance from health

[1] The premium payment rate is the number of monthly premiums actually paid, divided by the aggregate number of monthly premiums owed (number of participants x 12 months)
[2] According to the latest data (Social Insurance Agency, *Cumulative Payment Status of National Pension Premiums*), 55.23% of all monthly premiums owed in fiscal year 2004 had been paid as of February 2005 (compared to 55.18% in the previous year).

insurance. As such, a direct solution to the premium nonpayment problem appears elusive. To explore viable solutions, and to alleviate the sense of unfairness among persons who faithfully pay premiums, we need to analyze the causes of the premium nonpayment problem.

2. Payment Status by Age and Income

The government (SIA) has analyzed the causes of the low payment rate. They attribute the decline from fiscal 2000 (73.0%) to 2001 (70.9%) to the low payment rate among 20-year-olds who enrolled involuntarily. The significant decline from fiscal 2001 (70.9%) to 2002 (62.8%) is traced to the low payment rate among persons losing their full premium waivers, and persons switching from the employees' pension to the national pension.

However, these factors provide scant insight into the nonpayment problem. Stricter rules for full waivers, for example, were a one-time factor and fail to explain the persistent downtrend from earlier. And compulsory enrollment has depressed the payment rate because all 20-year-olds are assumed to owe premiums, including students on waivers.

Clearly, we need to dig further for other causes of the persistently low payment rate. According to the *2002 Survey of National Pension Participants*, the most common reason cited for nonpayment is financial hardship (Figure 2). Nonetheless, while the payment rate increases with income, some high income earners are also in arrears, indicating that financial reasons alone do not explain nonpayment (Figure 3).

Figure 2 Reasons for Nonpayment

Age	Financial hardship	Can't or won't rely on pension	Premiums might exceed benefits	Forgot to pay	Planned to pay balance later	No time left to gain eligibility
Total	64.5%	15.0%	4.5%	2.5%	2.2%	2.0%
20 ~ 24	56.3%	14.2%	3.5%	3.9%	2.3%	0.6%
25 ~ 29	62.3%	19.0%	4.1%	2.7%	2.7%	1.2%
30 ~ 34	67.9%	17.8%	6.1%	1.4%	2.0%	1.6%
35 ~ 39	68.3%	17.9%	5.6%	1.3%	0.6%	1.6%
40 ~ 44	76.1%	12.5%	4.4%	2.2%	1.5%	1.6%
45 ~ 49	75.2%	12.9%	3.5%	1.7%	2.0%	3.3%
50 ~ 54	69.6%	9.0%	4.4%	1.3%	3.4%	7.0%
55 ~ 59	68.6%	4.5%	6.6%	1.7%	2.7%	5.5%

Source: Social Insurance Agency, *2002 Survey of National Pension Participants*.

Figure 3　Payment Status by Household Income

Income	Nonpayer	Payer	Waiver
No income	16.0%	43.0%	41.0%
Less than ¥1 mil.	14.1%	50.4%	35.5%
¥1 ～ 2 mil.	17.4%	57.9%	24.7%
¥2 ～ 3 mil.	19.0%	63.4%	17.6%
¥3 ～ 4 mil.	17.7%	69.5%	12.8%
¥4 ～ 5mil.	16.9%	71.8%	11.3%
¥5 ～ 6 mil.	15.8%	71.5%	12.7%
¥6 ～ 7 mil.	15.2%	71.2%	13.6%
¥7 ～ 8 mil.	14.2%	71.5%	14.3%
¥8 ～ 9 mil.	13.9%	72.8%	13.3%
¥9 ～ 10 mil.	11.5%	73.1%	15.4%
¥10 ～ 12 mil.	12.1%	73.9%	14.0%
¥12 ～15 mil.	9.2%	76.9%	13.9%

Note: Nonpayers are persons who have not paid in even once during the past two-year period.
Source: Tokihiko Shimizu (2004), *Status of the National Pension: Premium Nonpayment and Countermeasures*.

Figure 4　Payment Status by Age

Age	Total persons (1,000)	Non- payer	Full payer	Partial payer	Waiver	Student waiver
Total	17,923	18.2%	49.4%	11.8%	13.8%	6.8%
20 ～ 24	3,883	23.1%	28.0%	10.6%	8.3%	30.0%
25 ～ 29	2,139	27.7%	39.5%	14.9%	16.1%	1.8%
30 ～ 34	1,853	25.1%	42.5%	13.5%	18.6%	0.3%
35 ～ 39	1,454	21.0%	47.6%	12.6%	18.7%	0.1%
40 ～ 44	1,384	15.0%	55.7%	12.2%	17.1%	0.0%
45 ～ 49	1,726	13.6%	59.1%	11.9%	15.4%	0.0%
50 ～ 54	2,754	12.0%	62.8%	11.5%	13.7%	0.0%
55 ～ 59	2,731	8.7%	70.3%	9.8%	11.3%	0.0%

Source: Social Insurance Agency, *2002 Survey of National Pension Participants*.

One finding that consistently emerges from SIA and other studies is the low payment rate among younger persons. This is sometimes attributed to dissatisfaction over inter-generational pension inequities. The argument is that younger generations tend not to pay because they expect to receive fewer benefits relative to premiums paid in. However, this is unpersuasive because preparing for retirement is generally not a high priority among young people.

3. Possibility of Subjective Factors

Since financial factors alone fail to adequately explain the nonpayment problem, we decided to shift the focus from objective attributes to subjective factors affecting personal behavior.

Objectively speaking, paying premiums is rational behavior for several reasons: (1) one-third of benefits (increasing to one-half in the future) is borne by the government; (2) in addition to the old age pension, benefits are paid for the survivors' pension and disability pension; (3) premiums are deductible from taxable income; and (4) benefits slide with inflation and wage levels. Nonetheless, the fact that so many people still fail to enroll or pay premiums suggests that other personal subjective factors may be at work.

One such factor is the degree of impatience (subjective discount rate). Generally, when calculating future value, we apply a discount rate based on the interest rate or inflation. However, the subjective discount rate varies from person to person depending on how willing they are to wait. Someone with a high subjective discount rate values future pension benefits less because he dislikes waiting. Moreover, research in behavioral economics shows that the subjective discount rate can be skewed toward the near future than the distant future (hyperbolic discount function).[3] When discount rates are hyperbolic, people value money spent today on premiums more than pension benefits received in the distant future, leading them to postpone payment.

A second factor that can affect payment behavior is the degree of risk tolerance. The national pension can be considered a type of insurance to avert future risk because: (1) benefits are paid until death, and (2) benefits slide with inflation and wages. Since people with a high risk tolerance tend to feel less need to insure against future risk, they tend not to pay premiums.

A third factor is whether people feel an obligation to pay premiums. According to behavioral economics, people have certain tendencies (value functions): (1) value depends less on the actual size of a gain than its size compared to a personal standard; and (2) the pleasure from a gain is less than the pain of a like-sized loss. Thus people who regard pension benefits as a gain feel obligated to pay premiums, while those who regard premiums as a loss tend not to pay.

Another factor that may affect payment is how long people think they will live. With the exception of the survivors' pension for persons with children under age 18, people can basically receive their national pension benefits only while alive. Thus people who predict they will not live long tend not to pay premiums.

[3] Behavioral economics is a new field that integrates cognitive psychology into economics. Daniel Kahneman shared the 2002 Nobel prize in economics for his pioneering work.

4. Our Survey Results

To test our hypothesis of the importance of subjective factors, we conducted a study funded by a research grant from MHLW.[4] From survey data of primary insured persons (self-employed persons, including those not enrolled), we targeted those with at least 1.3 million yen in annual income, and examined the relationship between subjective factors and premium payment.[5] For measures of premium payment, we collected data on: (1) payment status over the past two years (waivers are counted as having paid), and (2) whether people would still pay premiums if participation were voluntary. The voluntary participation question is intended to gauge people's true feelings about paying premiums—an important point in preventing potential nonpayment.

Before discussing subjective factors, we confirmed what government surveys have found about the relationship between payment status and attributes such as income and age (Figure 5). Our results are similar—no strong correlation exists between nonpayment (zero payments in the past two years) and household income, while younger people are more likely not to pay premiums.

Figure 5 Premium Payment by Age and Income

Payment during past two years

Income, age	Total persons	Paid every month	Paid most of time	Paid half the time	Didn't pay often	Didn't pay at all	Didn't pay: not enrolled
Total	99	36.4%	7.1%	10.1%	15.2%	23.2%	8.1%
Income							
¥1.3 ～ 3.0 mil.	31	22.6%	3.2%	12.9%	32.3%	22.6%	6.5%
¥3.0 ～ 5.0 mil.	31	41.9%	6.5%	12.9%	9.7%	22.6%	6.5%
¥5.0 ～ 7.0 mil.	12	50.0%	0.0%	8.3%	0.0%	25.0%	16.7%
¥7.0 ～ 10.0 mil.	13	46.2%	15.4%	7.7%	0.0%	23.1%	7.7%
¥ 10.0 mil. ～	12	33.3%	16.7%	0.0%	16.7%	25.0%	8.3%
Age							
20 ～ 24	9	11.1%	11.1%	11.1%	22.2%	44.4%	0.0%
25 ～ 29	23	34.8%	13.0%	0.0%	17.4%	30.4%	4.3%
30 ～ 34	18	11.1%	5.6%	16.7%	33.3%	22.2%	11.1%
35 ～ 39	14	42.9%	0.0%	14.3%	7.1%	28.6%	7.1%
40 ～ 44	16	37.5%	12.5%	18.8%	0.0%	12.5%	18.8%
45 or more	19	68.4%	0.0%	5.3%	10.5%	10.5%	5.3%

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[4] These results are compiled from a survey conducted in Dec. 2004 to Jan. 2005 for a study funded by MHLW entitled, "Study of Ways to Provide Individualized Information on National Pension Benefits and Burdens." An interim report will soon be available (in Japanese) on our website (www.nli-research.co.jp).

[5] We exclude low-income non-payers because they may be eligible for exemptions. We set the minimum gross annual income at 1.3 million yen because it approximates the income limit for several exemptions: the student waiver (1.18 million yen adjusted income, or 1.83 million yen gross income with the salary income deduction), the 50% premium waiver for self-employed (1.41 million yen for single persons), and the full waiver for salary earners or deferred payment for young persons (570,000 yen adjusted income for single persons, or 1.22 million yen gross income with the salary income deduction). It is also the maximum income allowed for tertiary insured persons (full-time housewives).

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Intention to pay if participation is voluntary

Income, age	Total persons	Definitely would pay	Probably would pay	Might pay	Might not pay	Probably wouldn't pay	Definitely wouldn't pay
Total	101	3.0%	18.8%	16.8%	23.8%	29.7%	7.9%
Income							
¥1.3 ～ 3.0 mil.	32	3.1%	21.9%	18.8%	25.0%	21.9%	9.4%
¥3.0 ～ 5.0 mil.	32	0.0%	15.6%	12.5%	28.1%	37.5%	6.3%
¥5.0 ～ 7.0 mil.	12	8.3%	8.3%	25.0%	16.7%	33.3%	8.3%
¥7.0 ～ 10.0 mil.	13	0.0%	30.8%	15.4%	23.1%	15.4%	15.4%
¥ 10.0 mil. ～	12	8.3%	16.7%	16.7%	16.7%	41.7%	0.0%
Age							
20 ～ 24	9	0.0%	11.1%	0.0%	33.3%	33.3%	22.2%
25 ～ 29	24	0.0%	25.0%	12.5%	25.0%	37.5%	0.0%
30 ～ 34	19	5.3%	5.3%	26.3%	15.8%	21.1%	26.3%
35 ～ 39	14	0.0%	21.4%	7.1%	35.7%	35.7%	0.0%
40 ～ 44	16	0.0%	6.3%	31.3%	12.5%	43.8%	6.3%
45 or more	19	10.5%	36.8%	15.8%	26.3%	10.5%	0.0%

Turning to the degree of impatience, we examined the subjective discount rate for nine different combinations of time period (three lengths) and monetary amount (three amounts; Figure 6). Figure 7 shows results for the subjective discount rate for 800,000 yen in ten years, a combination that resembles the receipt of pension benefits. While no clear correlation exists between the subjective discount rate and past payment, we found that the more impatient people are (high subjective discount rate), the less inclined they are to participate voluntarily. This supports our hypothesis.

Figure 6　Average Subjective Discount Rates

	¥10,000	¥70,000	¥800,000
1 week	160.2%	113.7%	57.0%
1 year	66.2%	44.4%	24.0%
10 years	22.5%	14.7%	11.8%

Figure 7　Premium Payment and the Subjective Discount Rate (10-year)

Payment during past two years

Subjective discount rate (10 year, ¥800,000)	Total persons	Paid every month	Paid most of time	Paid half the time	Didn't pay often	Didn't pay at all	Didn't pay: not enrolled
0% ～ 2%	16	31.3%	12.5%	6.3%	18.8%	25.0%	6.3%
4%	17	47.1%	0.0%	11.8%	5.9%	29.4%	5.9%
6%	17	47.1%	5.9%	11.8%	17.6%	17.6%	0.0%
8%	17	29.4%	5.9%	11.8%	23.5%	11.8%	17.6%
10%	10	20.0%	20.0%	0.0%	20.0%	20.0%	20.0%
20%	14	35.7%	7.1%	7.1%	14.3%	28.6%	7.1%
50% or more	7	28.6%	0.0%	28.6%	0.0%	42.9%	0.0%

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Intention to pay if participation is voluntary

Subjective discount rate (10 year, ¥800,000)	Total persons	Definitely would pay	Probably would pay	Might pay	Might not pay	Probably wouldn't pay	Definitely wouldn't pay
0% ～ 2%	16	0.0%	31.3%	25.0%	18.8%	25.0%	0.0%
4%	18	11.1%	16.7%	16.7%	22.2%	22.2%	11.1%
6%	17	5.9%	23.5%	17.6%	17.6%	29.4%	5.9%
8%	17	0.0%	23.5%	11.8%	23.5%	41.2%	0.0%
10%	10	0.0%	10.0%	20.0%	30.0%	20.0%	20.0%
20%	15	0.0%	13.3%	6.7%	26.7%	33.3%	20.0%
50% or more	7	0.0%	0.0%	14.3%	42.9%	42.9%	0.0%

As to whether the subjective discount rate is hyperbolic (higher in the near term than long term), no clear relationship was found with either payment status or voluntary participation (Figure 8).

Figure 8　Premium Payment and the Hyperbolic Discount Rate

Payment during past two years

Hyperbolic discount	Total persons	Paid every month	Paid most of time	Paid half the time	Didn't pay often	Didn't pay at all	Didn't pay: not enrolled
−50% or less	8	25.0%	12.5%	12.5%	12.5%	25.0%	12.5%
−50% ～ −20%	10	20.0%	0.0%	10.0%	30.0%	30.0%	10.0%
−20% ～ −10%	15	20.0%	20.0%	0.0%	20.0%	26.7%	13.3%
−10% ～ −4%	13	38.5%	0.0%	23.1%	15.4%	15.4%	7.7%
−4% ～ 0%	14	21.4%	7.1%	14.3%	14.3%	35.7%	7.1%
0%	21	52.4%	4.8%	9.5%	0.0%	23.8%	9.5%
0% ～ 10%	17	52.9%	5.9%	5.9%	23.5%	11.8%	0.0%

Intention to pay if participation is voluntary

Hyperbolic discount	Total persons	Definitely would pay	Probably would pay	Might pay	Might not pay	Probably wouldn't pay	Definitely wouldn't pay
−50% or less	9	0.0%	0.0%	11.1%	33.3%	22.2%	33.3%
−50% ～ −20%	10	0.0%	20.0%	20.0%	20.0%	40.0%	0.0%
−20% ～ −10%	15	0.0%	6.7%	20.0%	20.0%	33.3%	20.0%
−10% ～ −4%	13	7.7%	30.8%	7.7%	30.8%	23.1%	0.0%
−4% ～ 0%	14	14.3%	28.6%	14.3%	7.1%	28.6%	7.1%
0%	22	0.0%	22.7%	9.1%	36.4%	27.3%	4.5%
0% ～ 10%	17	0.0%	17.6%	29.4%	17.6%	35.3%	0.0%

Note: Hyperbolic discount rate is expressed as 10-year subjective discount rate minus 1-year rate (both for ¥800,000). The smaller (or more negative) the difference, the greater is the hyperbolic tendency.

Of the many ways to measure risk tolerance, we adopted a method commonly used in leading-edge research: the probability of rain that prompts a person to carry an umbrella. We found no clear relationship between this probability and either payment status or voluntary participation (Figure 9).

As for expected life span, people who predict a short life span are more likely not to have paid premiums. This result supports our hypothesis.

Thus our results not only confirm government survey results that younger persons are more likely not to pay premiums, but also reveal two other tendencies: (1) the greater the degree of impatience (subjective discount rate), the weaker is the intention to pay premiums; and (2) the shorter the life span that people predict for themselves, the less they are likely to pay premiums.

Figure 9　Premium Payment and Risk Tolerance

Payment during past two years

Rain probability that prompts umbrella	Total persons	Paid every month	Paid most of time	Paid half the time	Didn't pay often	Didn't pay at all	Didn't pay: not enrolled
Under 30%	21	42.9%	0.0%	19.0%	9.5%	19.0%	9.5%
30～40%	13	30.8%	30.8%	7.7%	15.4%	15.4%	0.0%
40～50%	27	44.4%	3.7%	7.4%	11.1%	33.3%	0.0%
50～60%	17	17.6%	0.0%	11.8%	29.4%	17.6%	23.5%
60～70%	11	45.5%	0.0%	0.0%	18.2%	18.2%	18.2%
70% +	10	30.0%	20.0%	10.0%	10.0%	30.0%	0.0%

Intention to pay if participation is voluntary

Rain probability that prompts umbrella	Total persons	Definitely would pay	Probably would pay	Might pay	Might not pay	Probably wouldn't pay	Definitely wouldn't pay
Under 30%	21	4.8%	14.3%	9.5%	47.6%	19.0%	4.8%
30～40%	15	0.0%	13.3%	20.0%	26.7%	33.3%	6.7%
40～50%	27	3.7%	22.2%	14.8%	22.2%	37.0%	0.0%
50～60%	17	0.0%	23.5%	23.5%	11.8%	35.3%	5.9%
60～70%	11	0.0%	18.2%	18.2%	18.2%	18.2%	27.3%
70% +	10	10.0%	20.0%	20.0%	0.0%	30.0%	20.0%

Figure 10　Premium Payment and Expected Life Span

Payment during past two years

Expected life span	Total persons	Paid every month	Paid most of time	Paid half the time	Didn't pay often	Didn't pay at all	Didn't pay: not enrolled
Under 65	13	23.1%	0.0%	15.4%	30.8%	30.8%	0.0%
65～69	19	31.6%	10.5%	0.0%	15.8%	31.6%	10.5%
70～74	18	16.7%	0.0%	27.8%	16.7%	22.2%	16.7%
75～79	20	50.0%	5.0%	10.0%	10.0%	20.0%	5.0%
80～84	16	37.5%	18.8%	6.3%	12.5%	18.8%	6.3%
85 +	13	61.5%	7.7%	0.0%	7.7%	15.4%	7.7%

Intention to pay if participation is voluntary

Expected life span	Total persons	Definitely would pay	Probably would pay	Might pay	Might not pay	Probably wouldn't pay	Definitely wouldn't pay
Under 65	14	0.0%	0.0%	14.3%	28.6%	35.7%	21.4%
65～69	19	0.0%	31.6%	15.8%	10.5%	36.8%	5.3%
70～74	19	0.0%	5.3%	5.3%	57.9%	26.3%	5.3%
75～79	20	5.0%	25.0%	30.0%	10.0%	30.0%	0.0%
80～84	16	6.3%	18.8%	12.5%	18.8%	31.3%	12.5%
85 +	13	7.7%	30.8%	23.1%	15.4%	15.4%	7.7%

5. Policy Implications

Our survey results have important policy implications. While the two tendencies revealed by our survey would reflect rational behavior if people's subjective judgments were correct, we doubt whether this is actually true. For example, people tend to predict shorter life expectancies for themselves compared to actuarial charts. As for degree of impatience, people might be more inclined to pay premiums if they knew that national pension surpasses other personal financial products because benefits are linked to inflation and wage levels. Thus misinformation and misunderstanding about the public pension scheme need to be corrected by providing accurate information. One method we recommend, now under study by the government, is to issue personalized reports.

The SIA's current steps to enforce premium payment are necessary to sustain the pension system without alienating participants who dutifully pay premiums. In addition, our results suggest the need to promote deeper understanding of the pension system so that participants will be motivated to pay premiums.

Figure 11 Awareness of the Public Pension

	Total	Age					
		20～29	30～39	40～49	50～59	60～69	70+
Pension benefits are guaranteed to keep up with inflation, wages	31.7%	17.1%	20.6%	29.3%	38.7%	39.9%	34.1%
Benefits are guaranteed in case of death/disability of income earner	42.5%	32.9%	37.5%	48.0%	52.0%	42.7%	34.8%
Retirees receive benefits until death	55.6%	32.6%	41.7%	53.5%	64.5%	63.5%	63.6%
Working generations are supposed to support retirees	58.0%	48.9%	62.2%	66.0%	68.5%	50.9%	47.0%
Pension benefits depend on premium payment period	62.5%	47.2%	61.6%	71.8%	71.7%	61.2%	53.0%
Everyone including students must enroll at age 20	66.7%	59.3%	65.7%	70.4%	72.4%	68.5%	58.3%

Source: Cabinet Office, *Opinion Survey of the Public Pension System* (February 2003).