The Role of a Longevity Insurance for Defined Contribution Pension Systems in Latin America

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- Defined-benefit mechanisms have been changing around the world and moving towards defined contribution, where what the person receives at retirement corresponds exactly to what that person contributed. In other words, this is closer to a savings scheme than to insurance, with the person receiving what he/she contributed, without transferences coming from other people.

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- We evaluate, for each country, an increase in the contribution rate vs. an equivalent payment for longevity insurance. Then the efficiency of raising the contribution to savings is compared with that for mandatory longevity insurance, to evaluate how much the pension increases in the two cases.

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- The role of longevity insurance would therefore be to cover the pensioner in case of living beyond a certain age.
- The amount of the benefit would be a specific percentage of the life annuity pension that that pensioner would purchase under an immediate life annuity option without beneficiary.

Costs and Benefits

- The cost of longevity insurance is computed for specific replacement rates for the immediate life annuity at retirement (30%, 50%, 70%, 100%) for a retiree without beneficiaries. The age the longevity insurance begins to make its pay-outs to the pensioner is fixed at 80, 85 and 90 years old.

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- Calculations with dynamic mortality tables, assuming the future pensioner is 20 years old in 2015, using the official tables and projected improvement factors based on the Lee-Carter model for Chilean population data.
- Annual real Interest rates assumptions: 5% in the active stage; 3% for life annuities and 4% for programmed withdrawal in the passive stage. Deferred annuity rate is the same as for immediate life annuities. No adverse selection because the insurance should be mandatory.

Costs: Man Case

	Insurance Cost for a Man aged 20 in 2015 without beneficiary and Impact on LA at age 65			
	RR covered by Insurance compared with Initial Pension	Longevity Insurance Starts		
		At age 80	At age 85	At age 90
		Additional Contribution as percentage of wage during active life		
Chile	30%	0.92	0.52	0.24
	50%	1.54	0.86	0.40
	70%	2.15	1.21	0.56
	100%	3.07	1.72	0.80
Colombia	30%	1.08	0.62	0.31
	50%	1.80	1.04	0.51
	70%	2.52	1.45	0.71
	100%	3.61	2.08	1.02
Mexico	30%	0.75	0.46	0.25
	50%	1.25	0.77	0.41
	70%	1.75	1.08	0.58
	100%	2.50	1.54	0.83
Peru	30%	0.91	0.51	0.24
	50%	1.52	0.86	0.41
	70%	2.31	1.20	0.57
	100%	3.05	1.71	0.81

Source: Own calculations.

Costs: Woman Case

Insurance Cost for a Woman aged 20 in 2015 without beneficiary and Impact on LA at age 65				
	RR covered by Insurance compared with Initial Pension	Longevity Insurance Starts		
		At age 80	At age 85	At age 90
		Additional Contribution as percentage of wage during active life		
Chile	30%	1.11	0.69	0.38
	50%	1.85	1.16	0.63
	70%	2.60	1.62	0.88
	100%	3.71	2.31	1.26
Colombia	30%	1.24	0.76	0.40
	50%	2.07	1.27	0.67
	70%	2.90	1.78	0.94
	100%	4.14	2.54	1.34
Mexico	30%	0.79	0.46	0.20
	50%	1.31	0.76	0.34
	70%	1.84	1.06	0.48
	100%	2.63	1.52	0.68
Peru	30%	1.07	0.65	0.34
	50%	1.78	1.09	0.57
	70%	2.49	1.52	0.80
	100%	3.56	2.17	1.14

Source: Own calculations.

Benefits

- In order to analyse the benefits of the longevity insurance, the following graphs show how much the pension grows in percentage terms, whether male or female, single or married, in relation to the situation in force in each country in the case of increasing the contribution for the individual account and under the longevity insurance proposal (with a cost equivalent to the additional contribution).

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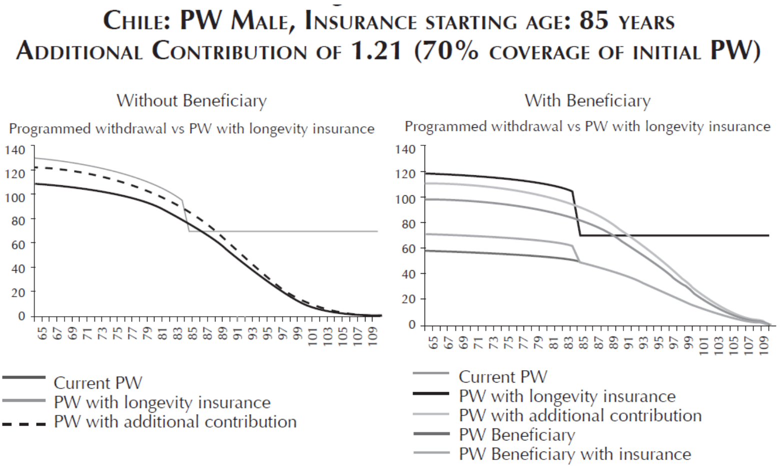
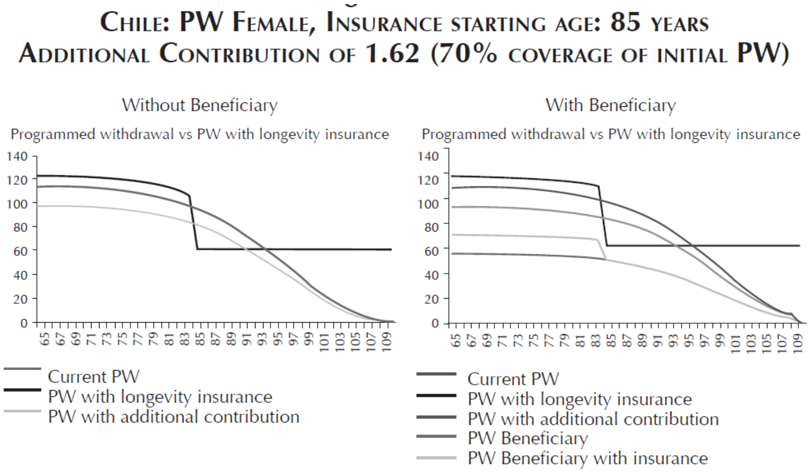
- The graphs are for the Programmed Withdrawal case, where no longevity coverage is available under the current systems.

Benefits: Man Case



Benefits: Woman Case



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- To evaluate its costs and benefits, the costs of longevity insurance are analyzed for the case of the four countries in such a way as to give different coverage levels as from alternative advanced ages.
- The higher the coverage and the lower the age at which it starts to operate, the higher the cost of the insurance. At the same time, differences can be seen between countries, mainly concerning the level of coverage for survivorship beneficiaries and the contribution rate in the current pension systems. Another element that implies differences between countries are the life-expectancy tables.

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- According to the design presented in this study, the longevity insurance would be paid throughout the active life and would cover pensions as from a certain advanced age.

Conclusions

- Under the programmed withdrawal option, the benefits are calculated by cutting short the mortality table at the age when the insurance comes into play. The person who chooses this option would have a decreasing payment, exactly as happens today, but with a floor as from the age when the payments from the longevity insurance begin.

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- The results of the insurance cost as a percentage of wage, for a coverage of 70% of the pension at regular retirement age, beginning at 85 years old, would be between 1.08% in Mexico and 1.78% in Colombia in the case of men, basically reflecting the differences in mandatory contribution rates in the two countries (7.6% in Mexico and 11.5% in Colombia). In general, the cost for women is higher than for men, because women have a longer life expectancy.

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- The impact is greater in programmed withdrawal with beneficiary because the mortality credits are used to pay only pensions for retirees, and resources are not assigned to paying more survivorship pensions.
- In the case of life annuities, the contribution of the longevity insurance is lower, because in this option the mortality credits are already being used.