The Chilean pension withdrawals and the 2025 reform

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Advantages or disadvantages of the Chilean system

Low redistribution and risk-insurance (Barr and Diamond 2008).

Largest component of the system are the personal private pension accounts, with a 10% contribution rate, created in 1981. A small "solidarity" pension existed (1974) and was substantially increased in 2008, 2019 (Social Explosion) and more recently in 2022 (post pandemic).

Contribution rate was low for OECD countries (18%). But Chile did not want to increase the perceived "business" of private asset managers.

High administration costs and low competition among fund managers.

Large informal labor markets and low female labor participation (52% just before the pandemic) imply low coverage of private accounts.

No compulsory annuity for retirees implies adverse selection.
Women retire 5 years earlier than men (60, 65).

Chile: pension policies during the pandemic

Pension reform was on top of legislatory agenda for several years, with increase of solidarity payments in 2019 and 2022, two pension withdrawals in 2020 and one in 2021, and a yet unsettled increase of 6% in the contribution rate (to personal accounts or solidarity).

The pension withdrawals represented 20% of the GDP, 18% of the pre-pandemic pension assets, depleted entirely the accounts of over 4 million workers, and reduced the accounts of 10.5 million people.

At least 30 countries implemented some form of pension withdrawal during the Covid pandemic in 2020 and 2021 (OECD 2020, 2021).

The most significant pension withdrawals were in Peru and Chile: 4.2% of the GDP in Peru vs 20% of the GDP in Chile. As a fraction of the system's assets, the pension withdrawals were 6 and 10 times lower, respectively, in Iceland and Australia, and more than 30 times lower in Mexico, New Zealand and Spain (OECD 2020, 2021).

Major pension reform in January of 2025

After prolongued debate (since 2014), a pension reform in January of 2025:

i) Employee's contributory rate remains at 10% (plus 1% fee). Employer's contributory rate increases from 1.5% to 8.5%. Graduality of 10 years.

ii) Of the 8.5%, 4.5% will go to individual accounts. The other 4% are distributed as 2.5% for disability and survival fund (before 1.5%), 1.5% as sovereign loan (phased out by 2040) later added to individual accounts.

iii) Women with a minimum of 10 years (15 years in future) and men with a minimum of 20 years of contributions will get an additional pension payment of 0.1 UF (1 UF roughly 40 USD) per year contributed.

iv) Additional bonus for women to receive same pension as spouse.

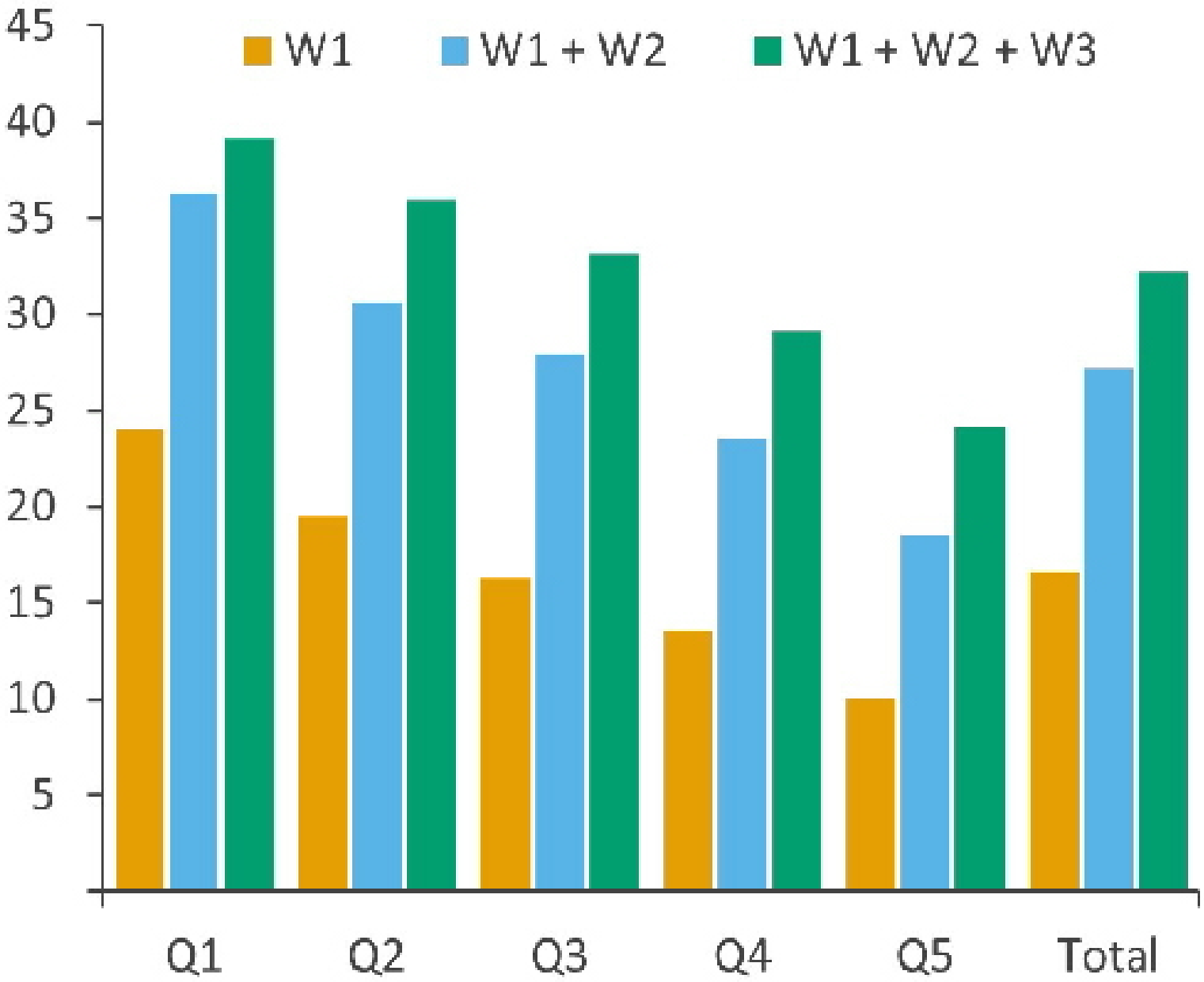
v) Risk category funds are replaced by life-stage adjusted pension funds. Supervisor can auction up to 10% of the compulsory wealth savings.

Data

We use the 4,400 urban households sample of the Chilean Household Finance Survey (EFH) wave of 2021. Similar to SCF and HFCS.

Sample is matched with pension account and withdrawal averages of groups based on gender, age, education, income quintile from the Superintendency of Pensions and Unemployment Insurance Fund.

Withdrawals were large fractions of savings



Projection of 500 worker types (age, educ, sex, industry)

Simulation of current generation of workers (25 and above).

500 worker types are simulated until retirement age.

Parameters of Labor market and Demography:
Labor force participation
Unemployment probability
Formal employment and contribution probability
Expected real income growth
Discount factor 4%
Life expectancy at age 60 by gender and cohort (United Nations)

Pension system contributory & non-contributory parameters by sex-cohort

2022 non-contributory pension increase and fiscal cost

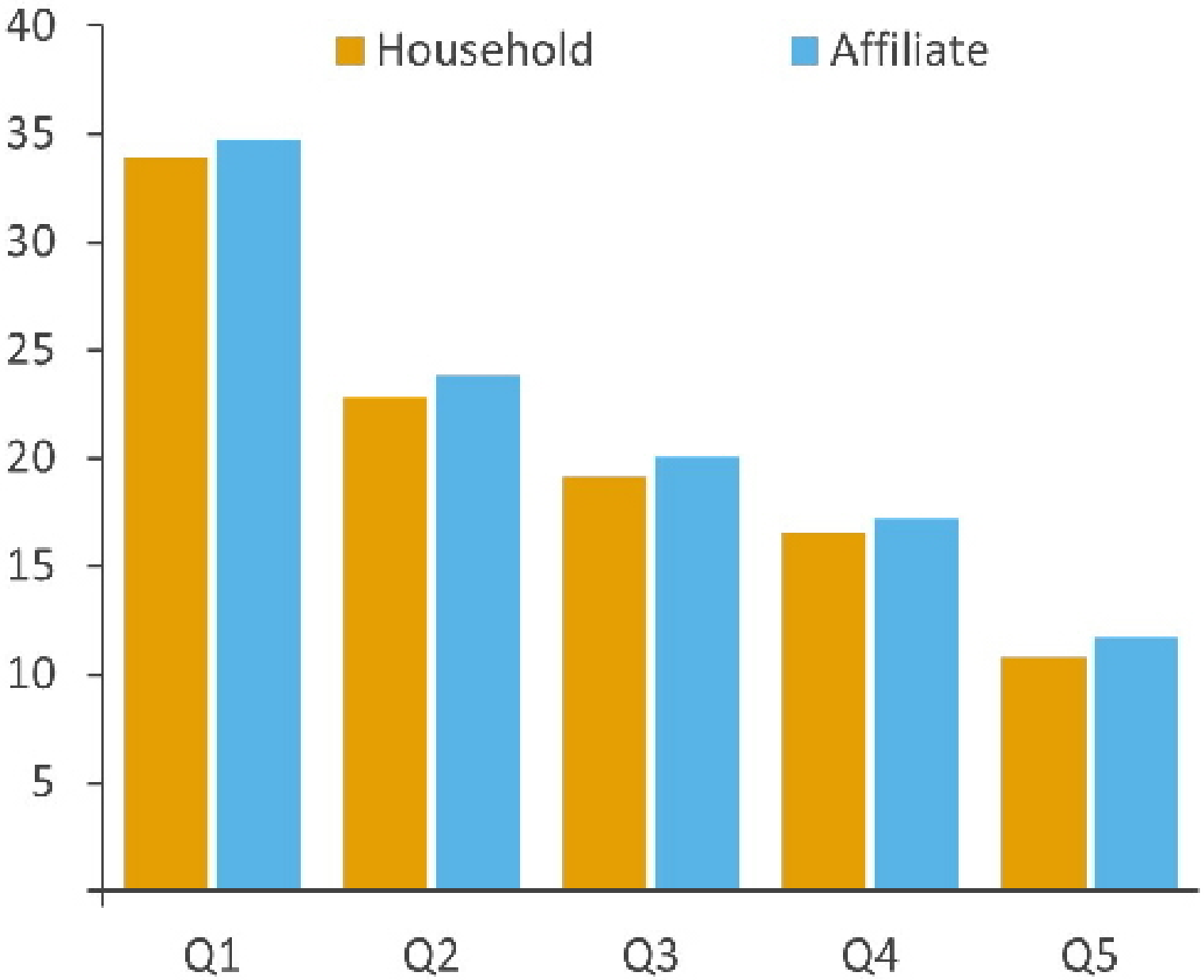
$\tilde{p}a_{k,t}(R_k)$: contributory pension income. $pw^d_{k,i,2020}$: withdrawal amounts

$B^{2019}_{k,t} = SB^{2019}_i \max(a_1 - \tilde{p}a_{k,t}(R_k), B(\tilde{p}a_{k,t}(R_k)))$, with $a_1 = 6.61$ UF and SB^{2019}_i denotes lowest 3 quintiles of income. $B(\tilde{p}a_{k,t}(R_k))$ is the "Solidarity Pension" scheme that existed in Chile until 2019.

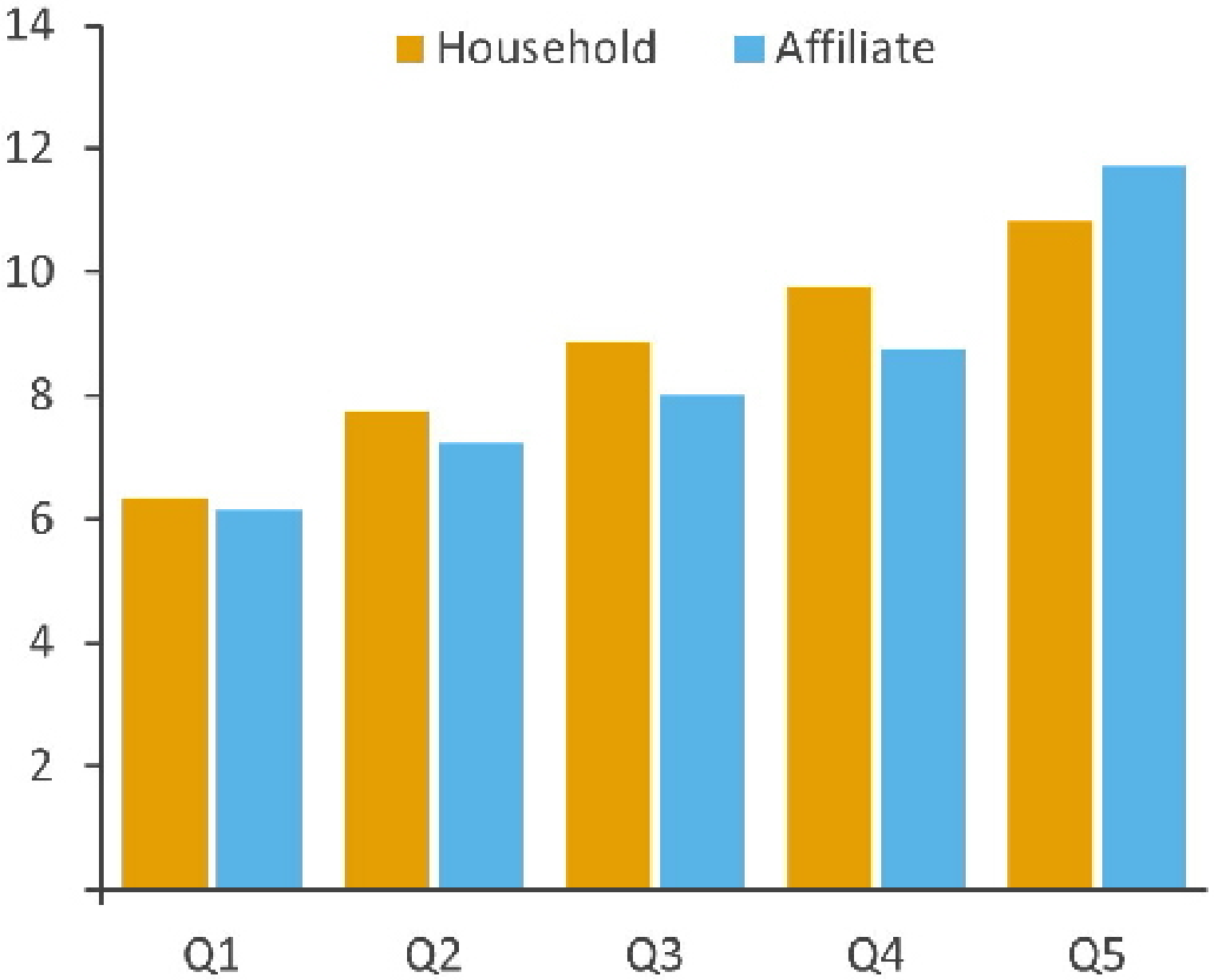
"Universal Guaranteed Pension" (PGU) of 2022,
$B^{2022}_{k,t} = SB^{2022}_i(b_1 1(\tilde{p}a_{k,t}(R_k) \leq b_2) + b_1(1 - \frac{\tilde{p}a_{k,t}(R_k) - b_2}{b_3 - b_2})1(b_2 < \tilde{p}a_{k,t}(R_k) < b_3))$, with $b_1 = 5.93$ UF, $b_2 = 20.18$ UF, $b_3 = 32.04$ UF, and SB^{2022}_i denotes lowest 9 deciles of income.

$$FC_P = \frac{\sum_{k \in P} 12 \times (B^{2022}_{k,t^*} - B^{2019}_{k,t^*}) \dfrac{1 - (1/\beta)^{-12 \times (T_{k,t} - R_k)}}{r(1/\beta)^{R_k - S(t,k)}}}{\sum_{k \in P} pw^{d=1}_{k,i,2020} + pw^{d=2}_{k,i,2020} + pw^{d=3}_{k,i,2021}}$$

High contributory pension losses from withdrawals



But total pension losses were much smaller



PGU fully compensated withdrawals for many affiliates

Fraction of affiliates that were fully compensated (or more) from the withdrawals by the 2022 legislation (% of affiliates in each group)

Sex	Age	Secondary school or less	Technical educ. or some college	College or more
Men	25-59	0	0	0
Men	60-64	0	0	0
Men	65-99	100	100	100
Men	All	23.7	8.7	16.0
Women	25-59	0	0	0
Women	60-64	100	100	100
Women	65-99	100	100	100
Women	All	40.0	15.2	17.0

Average differences by educational group

Average difference (in %) between the pensions after the withdrawals and the 2022 law relative to the no withdrawals and legislation scenario

Sex	Elementary school	Secondary school	Technical educ. or some college	College	Post-grad
Loss (in %) between the simulated contributory pension after the withdrawals relative to the no withdrawals scenario					
Men	24.3	20.4	17.2	12.8	11.1
Women	33.7	31.1	20.0	15.0	14.4
Loss (in %) between the simulated total pension after the withdrawals and 2022 law relative to the no withdrawals and no law scenario					
Men	6.5	8.9	10.4	8.5	8.7
Women	4.0	7.5	10.0	9.6	11.3

Fiscal costs (similar to Madeira LAJCB 2024)

With no pension reform, PGU of 2022 and Covid withdrawals cost 15.8% of pre-pandemic GDP. After 2025 reform, this cost falls to 12.4% of GDP (fiscal gains of 3.4% of GDP-preCov).

Delay in retirement age could decrease fiscal costs to 7.6% of GDP (further fiscal gains of 4.7% of GDP-preCov).

Fiscal costs as a fraction of the pension withdrawals (in %)

Annual risk free interest rate (in %)	3.5	4.0 (baseline)	4.5
No pension reform (baseline)	81.5	78.9	75.8
2025 reform: increase in contributions	66.6	61.8	57.1
Retirement at age 67 (both sexes) & increase in contributions	42.2	38.1	34.2

Madeira JIMF 2022: private savings rate

$$\max_{\{C_{i,t}, C_{i,t+1}, ..\}} \sum_{h=S(t,i)}^{T_t} \beta^{h-S(t,i)} u(C_{i,h}) \text{ s.t.}$$

$$\sum_{h=S(t,i)}^{T_t} \frac{C_{i,h}}{(1+r)^{h-S(t,i)}} \leq PW_{i,t} + SPW_{i,t} + FE_{i,t}$$

where $PW_{i,t}$ is contributory pension wealth
$SPW_{i,t}$ is non-contributory (solidarity) wealth
$FE_{i,t}$ is the present value of the future earnings (labor and non-labor)

$$C_{i,t} = F_{i,t}(FE_{i,t} + PW_{i,t} + SPW_{i,t}), \text{ with } F_{i,t} = \frac{1}{\sum_{h=S(t,i)}^{T} \beta^{h-S(t,i)}}$$

Simulated effect of withdrawals on savings

Savings rate before and after the 3 pension withdrawals

Mean values for age 25-64	Voluntary Savings $SR_{i,t} = \frac{P_{i,t} - C_{i,t}}{P_{i,t}}$		Total Savings $TSR_{i,t}$	
Income quintile	Before	After	Before	After
1 (poor)	-10.4	-13.2	-6.6	-9.4
2	-3.5	-6.5	1.9	-1.1
3	2.9	0.2	9.0	6.4
4	8.8	6.7	15.6	13.5
5 (rich)	21.3	20.1	27.1	25.9
Household average	3.8	1.5	9.4	7.1
Income-weighted	14.6	12.9	20.1	18.4

2025 reform increases savings rate by 4.1%

Reform plan Income quintile	No reform Total Savings:	With pension reform $TSR_{i,t} = SR_{i,t} + CS_{i,t}$
1 (poor)	-9.4	-6.6
2	-1.1	3.0
3	6.4	11.1
4	13.5	19.0
5 (rich)	25.9	30.3
Household average	7.1	11.4
Income-weighted	18.4	22.5

Delaying retirement age to 67 increases pensions

Change in pension replacement ratios (in %) if retirement age is delayed to age 67 for both genders

Income	Year of cohort retirement			
Quartile	2025	2035	2045	2055
1	22.3	6.7	5.5	6
2	7.4	4.4	4.3	4.5
3	11.2	7.1	6.8	6.9
4	9.9	6.9	7.1	7.3
Total	11.5	6.3	6.1	6.4

Conclusion

After increase in non-contributory pensions in 2022, there are only small pension income losses from the Covid pension withdrawals:

With no pension reform, PGU of 2022 and Covid withdrawals cost 15.8% of GDP-preCov. 2025 pension reform implies fiscal gains of 3.4% of GDP.

Increase in retirement age (+2 men, +7 women) can improve replacement ratios and decrease fiscal costs.

Pension withdrawals decreased savings rate by 1.7% (Madeira 2022). 2025 reform increases savings rate by 4.1%.