



Pension system in the Republic of Catalia

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System Design

- PAYG defined benefit system
- Contribution rate: 20% from employers
- Retirement age: 60 for men and 55 for women (no early retirement)
- Benefit formula: generous accrual rate of 2.2% per year based on final salary
- Indexation: post-retirement benefits are indexed to wage growth
- No restrictions on minimum and maximum pension (for simplicity)



Current status

- Mature system
- Coverage rate: ~40% of population age 18 to retirement
- System Dependency Rate: 22% (all pensioners/contributors)
- Average replacement rates for existing old-age pensioners:
~ 80%
- Total expenditure is 3.2% of GDP, total revenue is 3.5% of GDP and the system is in surplus

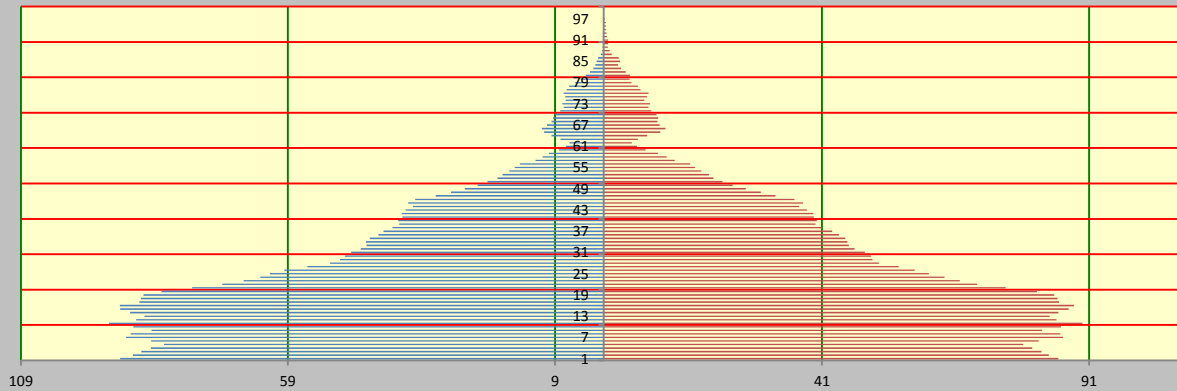
Projections:
No-Reform (Baseline) Scenario

Demographic Assumptions

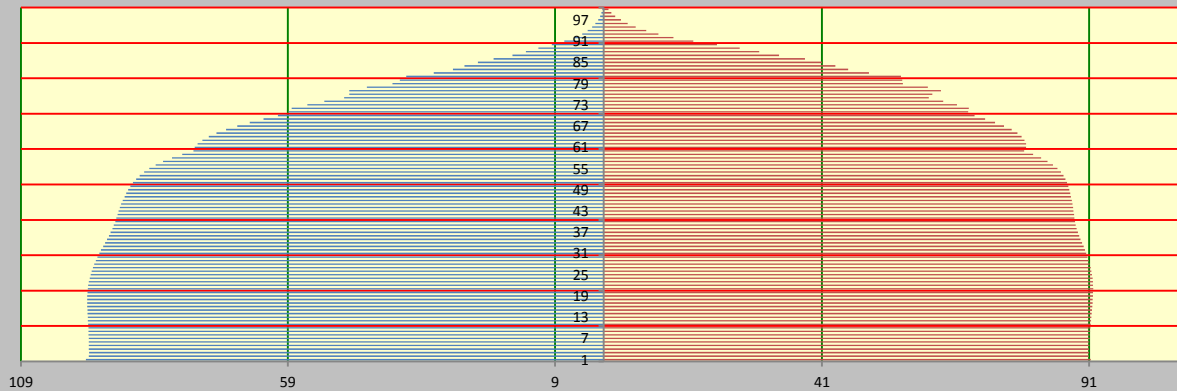
	Year 0	Year 5	Year 10	Year 20	Year 30	Year 60	Year 70
Male:							
At Birth	63.4	65.5	66.7	68.5	69.7	70.9	75.2
At Age 65	12.4	12.7	12.9	13.4	13.7	14.2	16.0
At Retirement: 60	15.6	16.0	16.2	16.7	17.2	17.7	19.8
Female:							
At Birth	69.4	71.7	73.1	75.0	76.2	77.5	81.8
At Age 60	18.2	18.9	19.5	20.3	21.0	21.7	24.3
At Age 65	14.5	15.1	15.6	16.4	17.0	17.6	20.0
At Retirement: 55	22.2	23.0	23.6	24.6	25.3	26.0	28.8
Fertility	3.1	2.8	2.4	2.3	2.3	2.2	2.1

Population Pyramids

Year 0



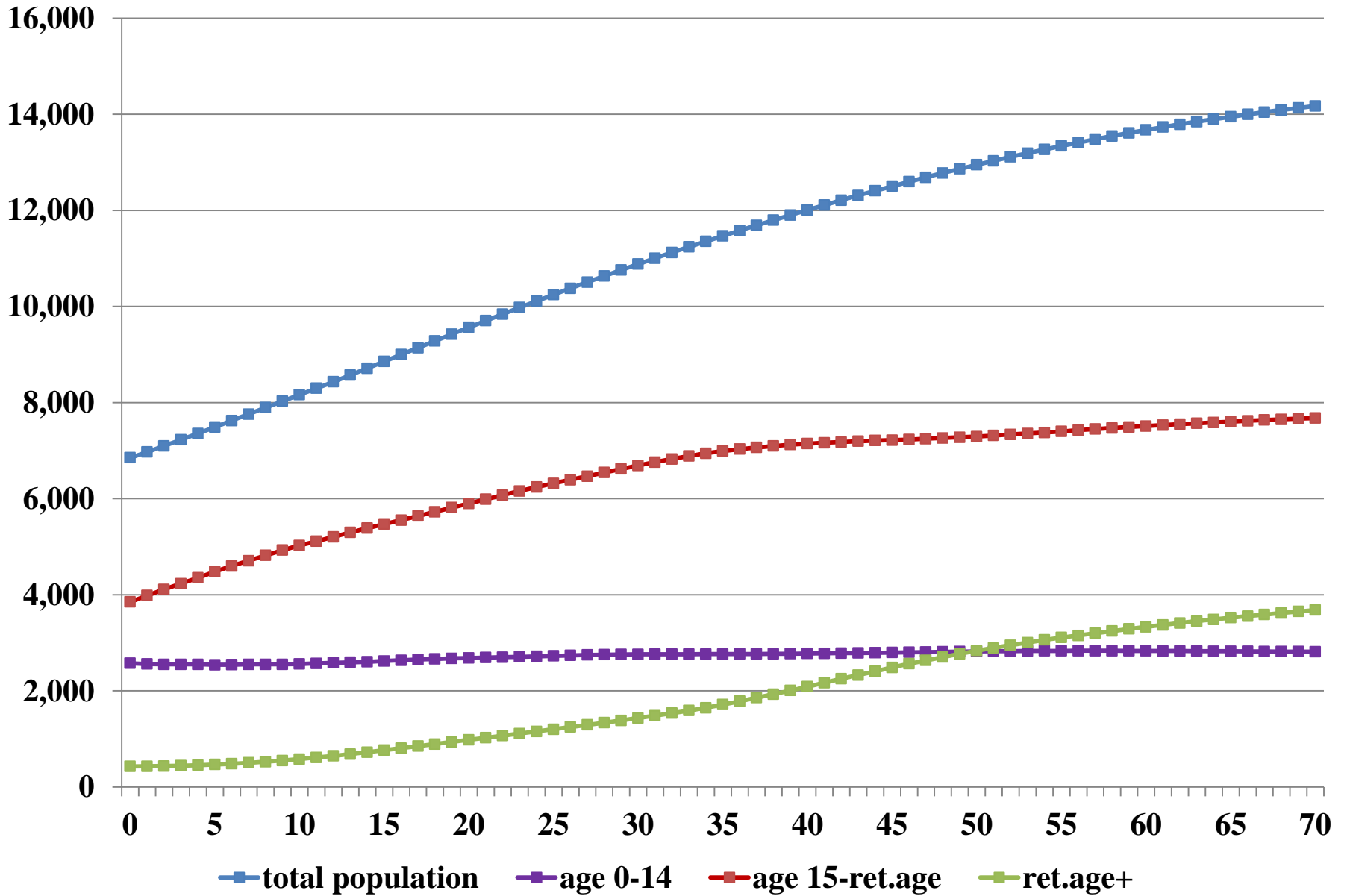
Year 70



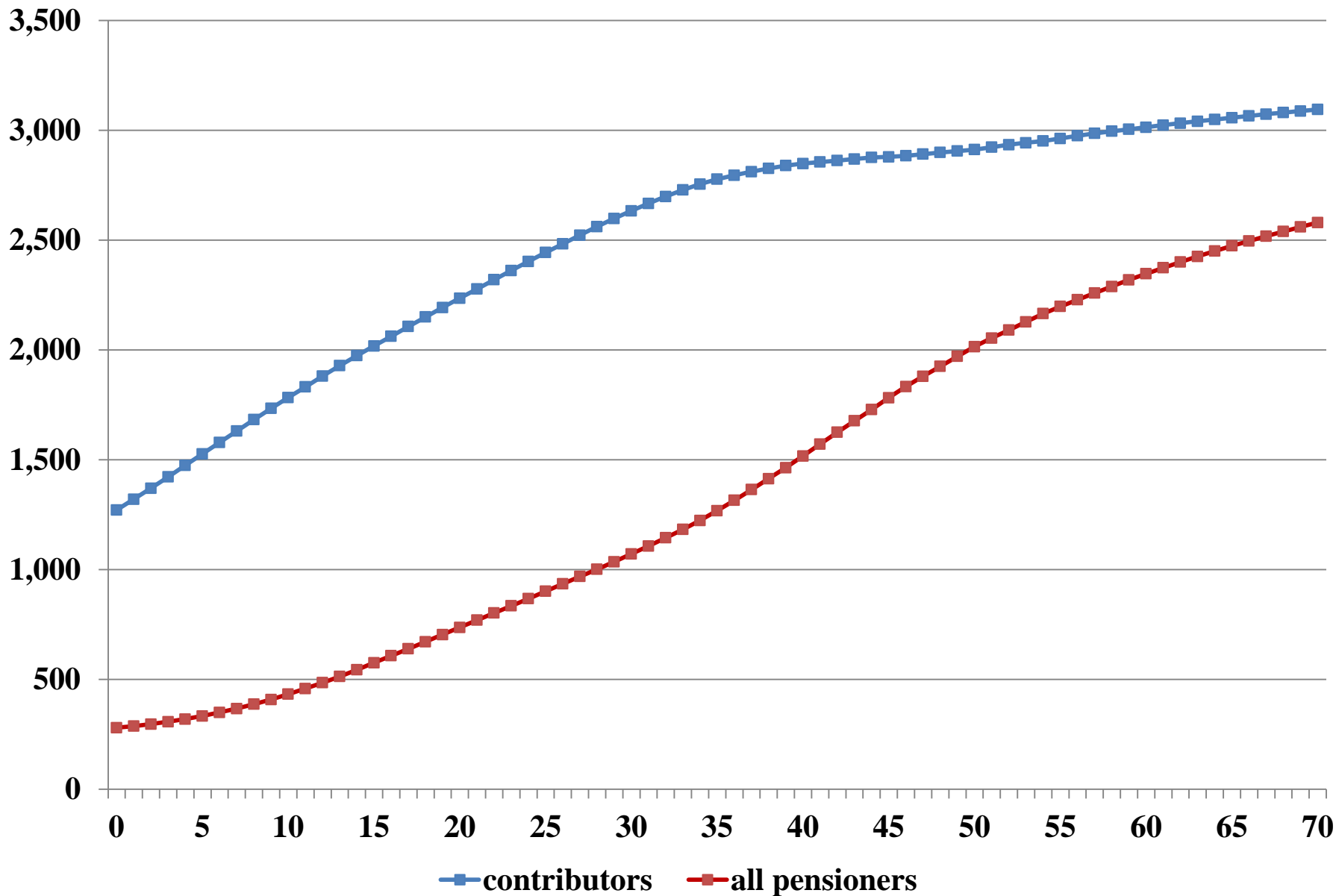
Macroeconomic Assumptions

	Year 1	Year 10	Year 20	Year 30	Year 40	Year 70
Real GDP growth	5.0%	4.5%	4.0%	3.5%	2.2%	2.2%
Inflation	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Real wage growth	2.2%	2.1%	2.4%	2.4%	2.0%	2.0%

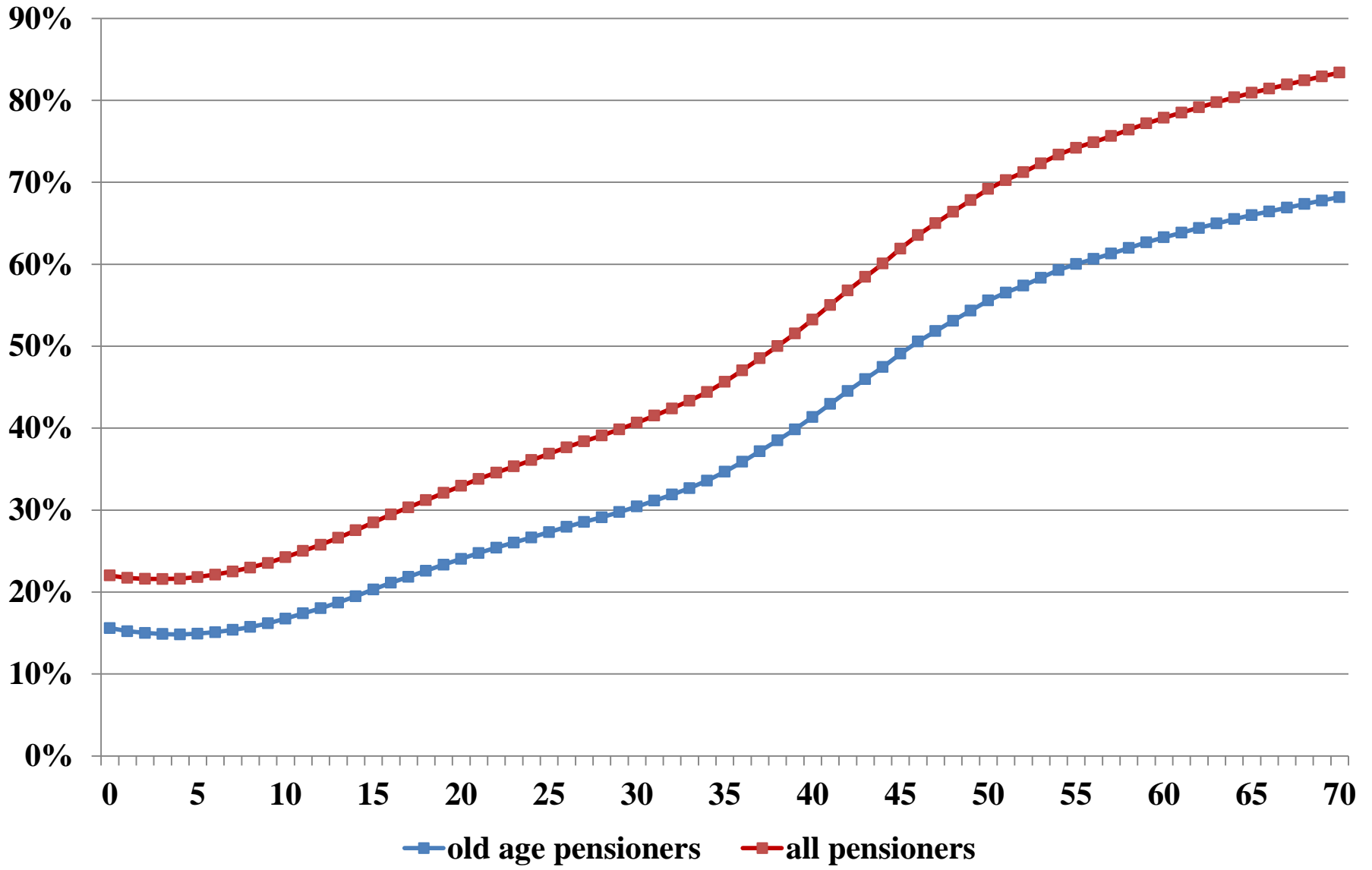
Baseline: Population (thousand persons)



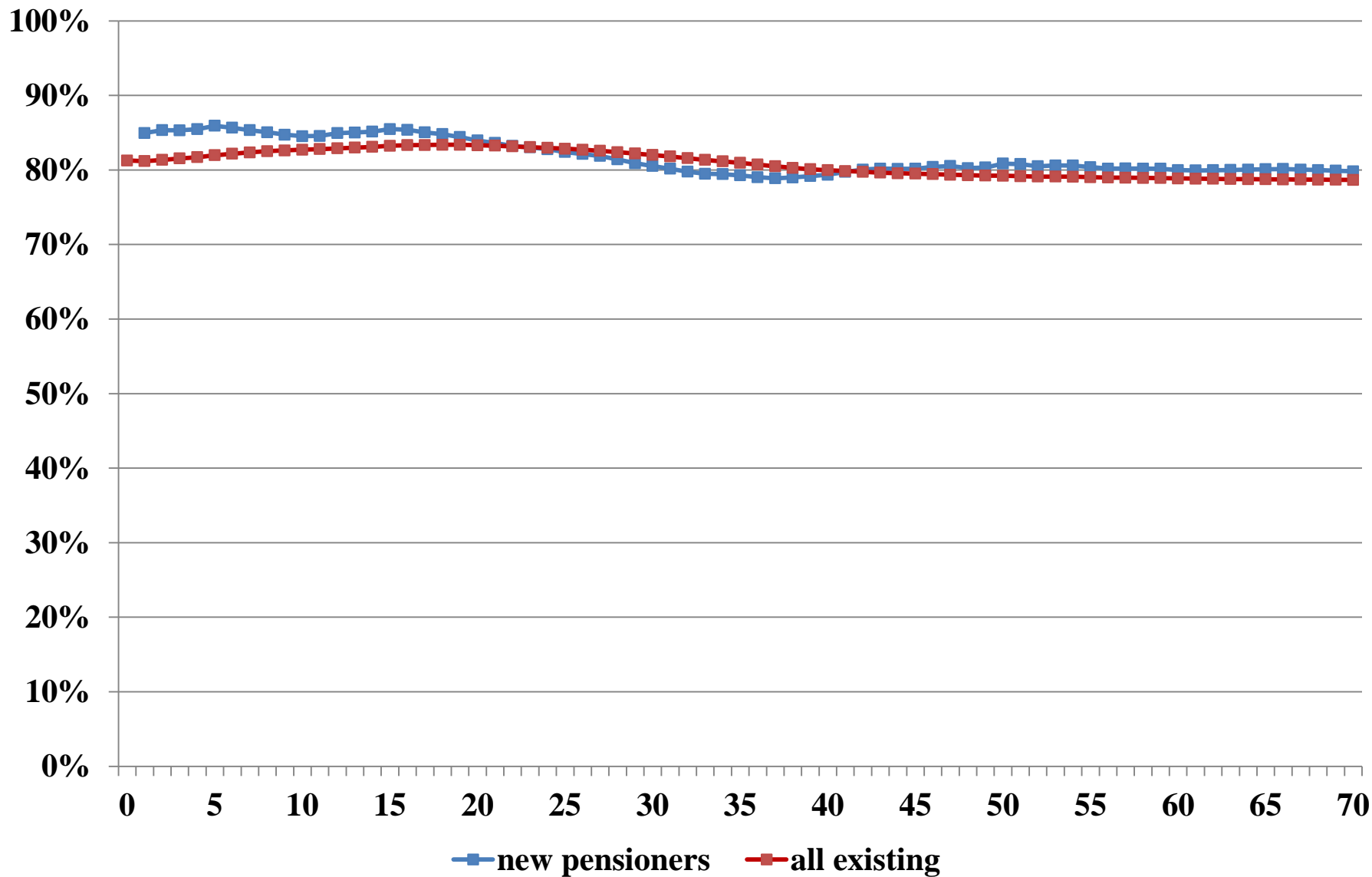
Baseline: Number of System Members (thousand persons)



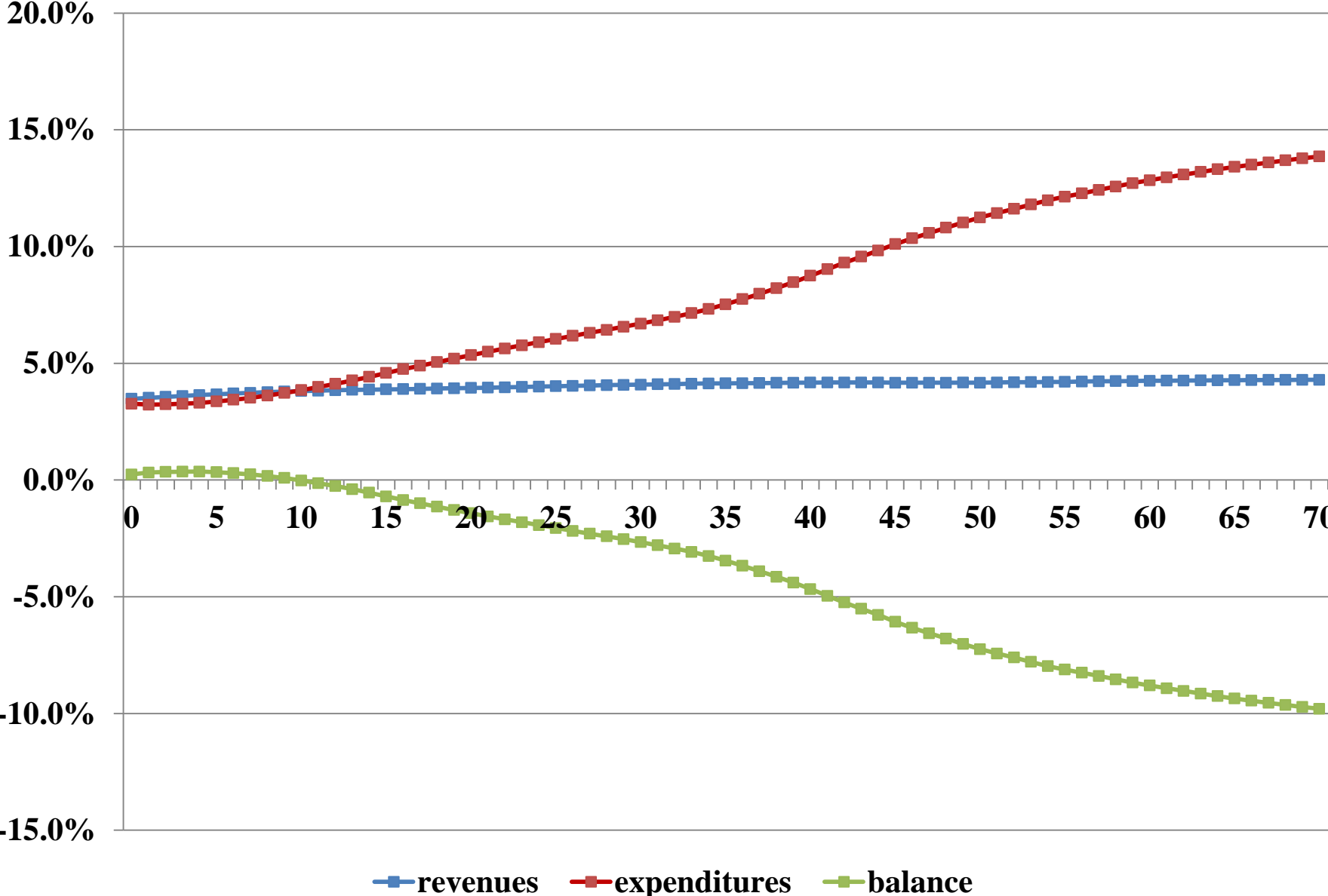
Baseline: System Dependency Rate (number of pensioners/number of contributors)



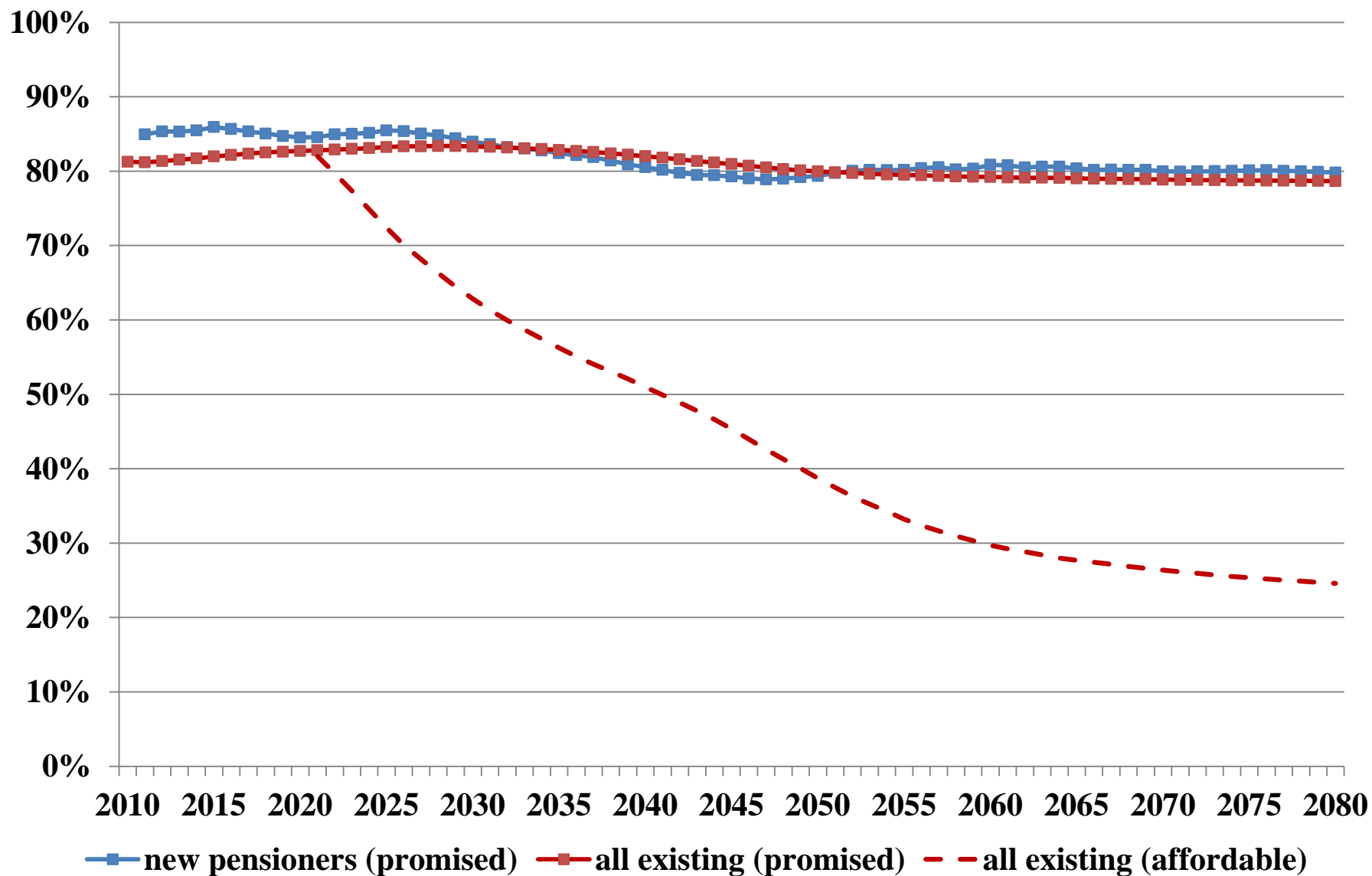
Baseline: Average Replacement Rates for Old Age Pensioners (% of average wage)



Baseline: System Finances, % of GDP



Baseline: Average Replacement Rates for Old Age Pensioners (% of average wage)





Key Issues

- Growing total dependency rate due to population aging: from current 22% to 83% in the long-run
- Generous benefit formula (high accrual rate, final salary feature)
- Expensive indexation policy
- System is financially unsustainable: deficits reach 10% of GDP in the long-run
- So, risk of defaulting on the promise in the future is high
- Estimated IPD: ~ 140% of GDP (at 4% real discount rate)
- Large uncovered population (farmers)

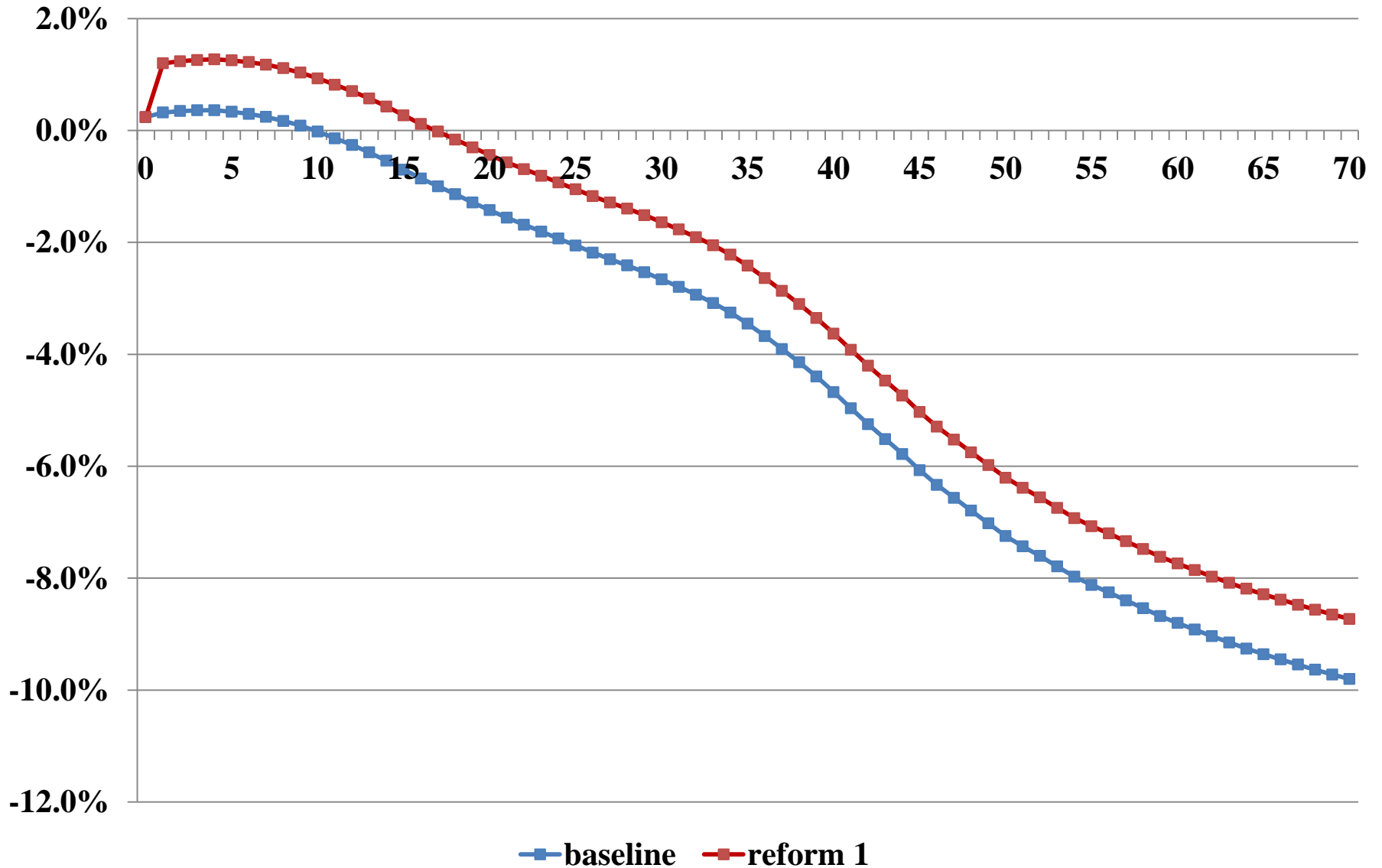


Sensitivity Tests

- Test 1: increasing **contribution rate** from 20% to 25%
- Test 2: decreasing **accrual rate** from 2.2% to 1.5%, applied to post-reform years
- Test 3: gradual increase in **averaging period from** last year to lifetime average earnings valorized to wage growth
- Test 4: switching from wage to price **indexation of pensions**
- Test 5: increasing **retirement age** from 60/55 for men/women to 65 for both genders over the next 20 years and then in line with life expectancy (to 69 by the end of the projections period)

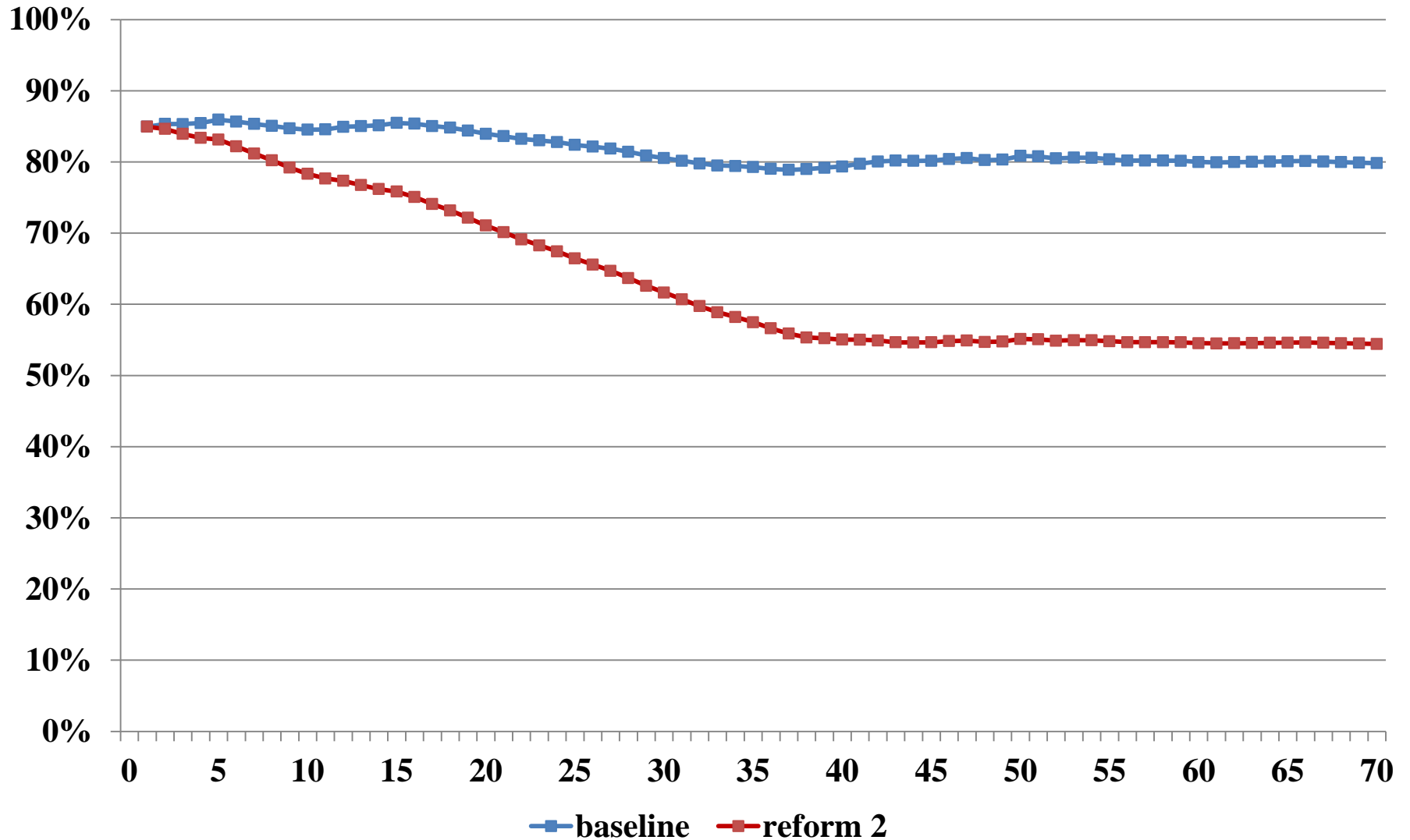
Reform 1: Raising Contribution Rate

Annual Current Balance, % of GDP



Reform 2: Decreasing Accrual Rate

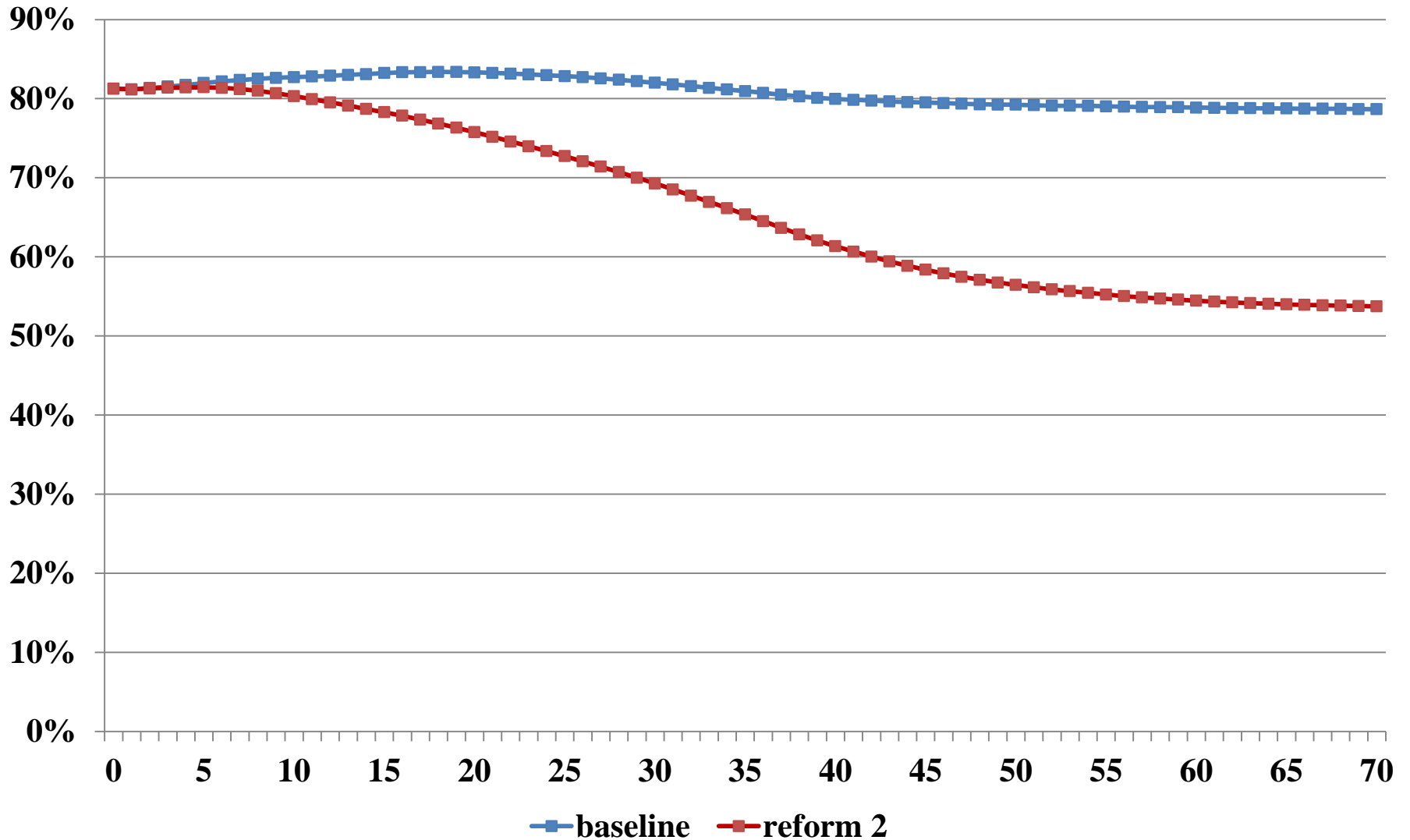
Average Replacement Rates for New Old Age Pensioners (% of average wage)



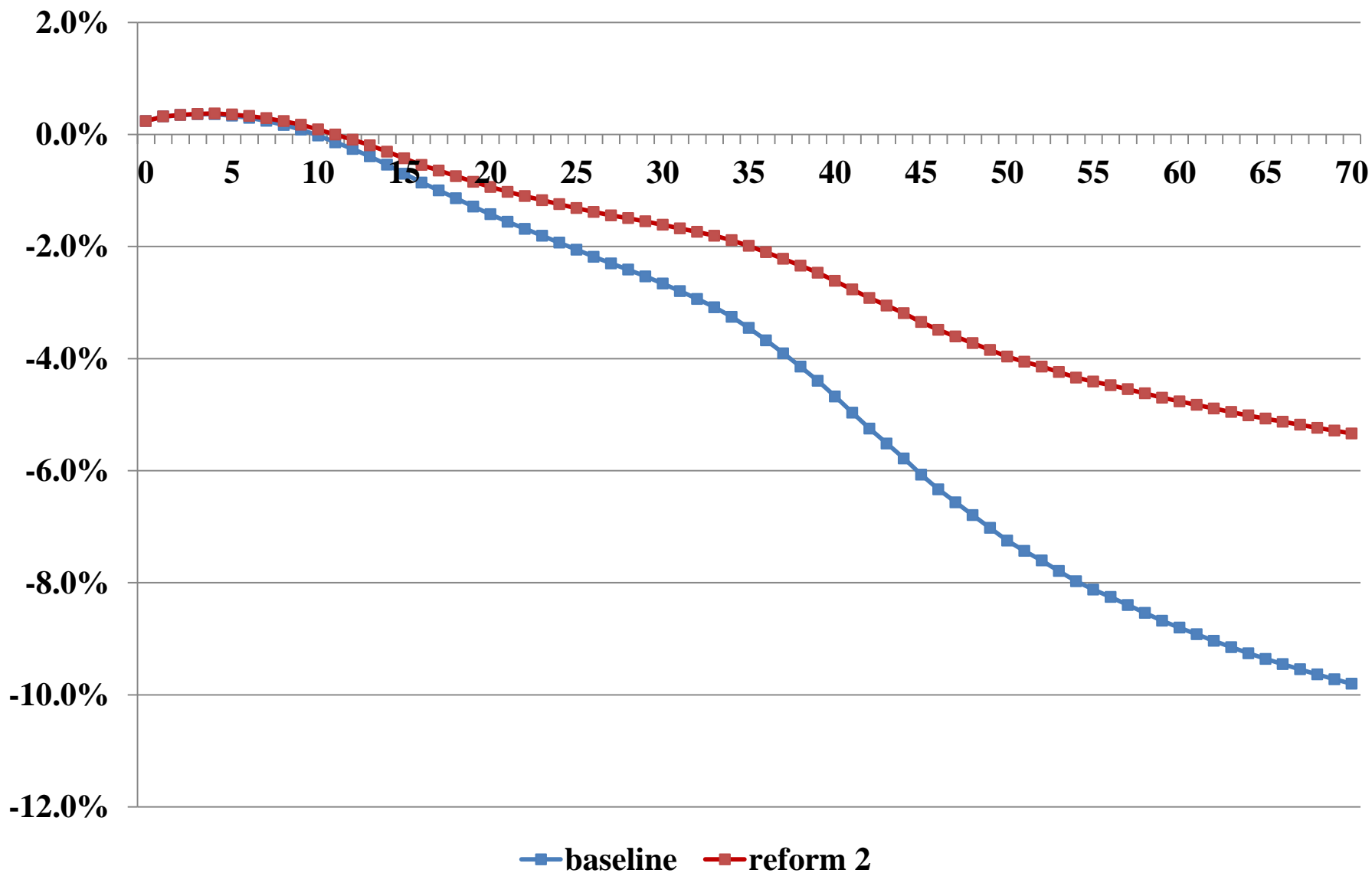
Reform 2: Decreasing Accrual Rate

Average Replacement Rates for All Old Age Pensioners

(% of average wage)

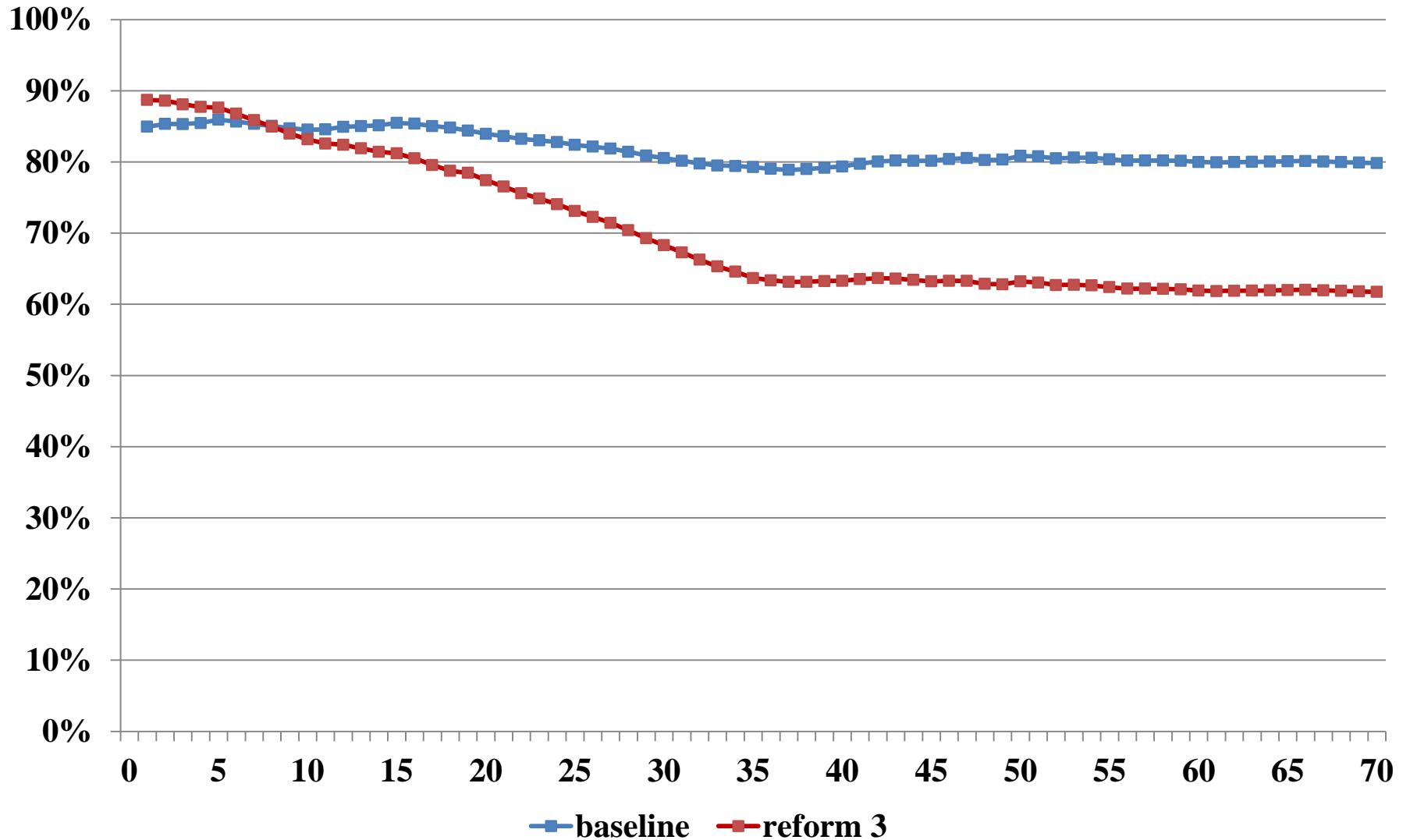


Reform 2: Decreasing Accrual Rate Annual Current Balance, % of GDP

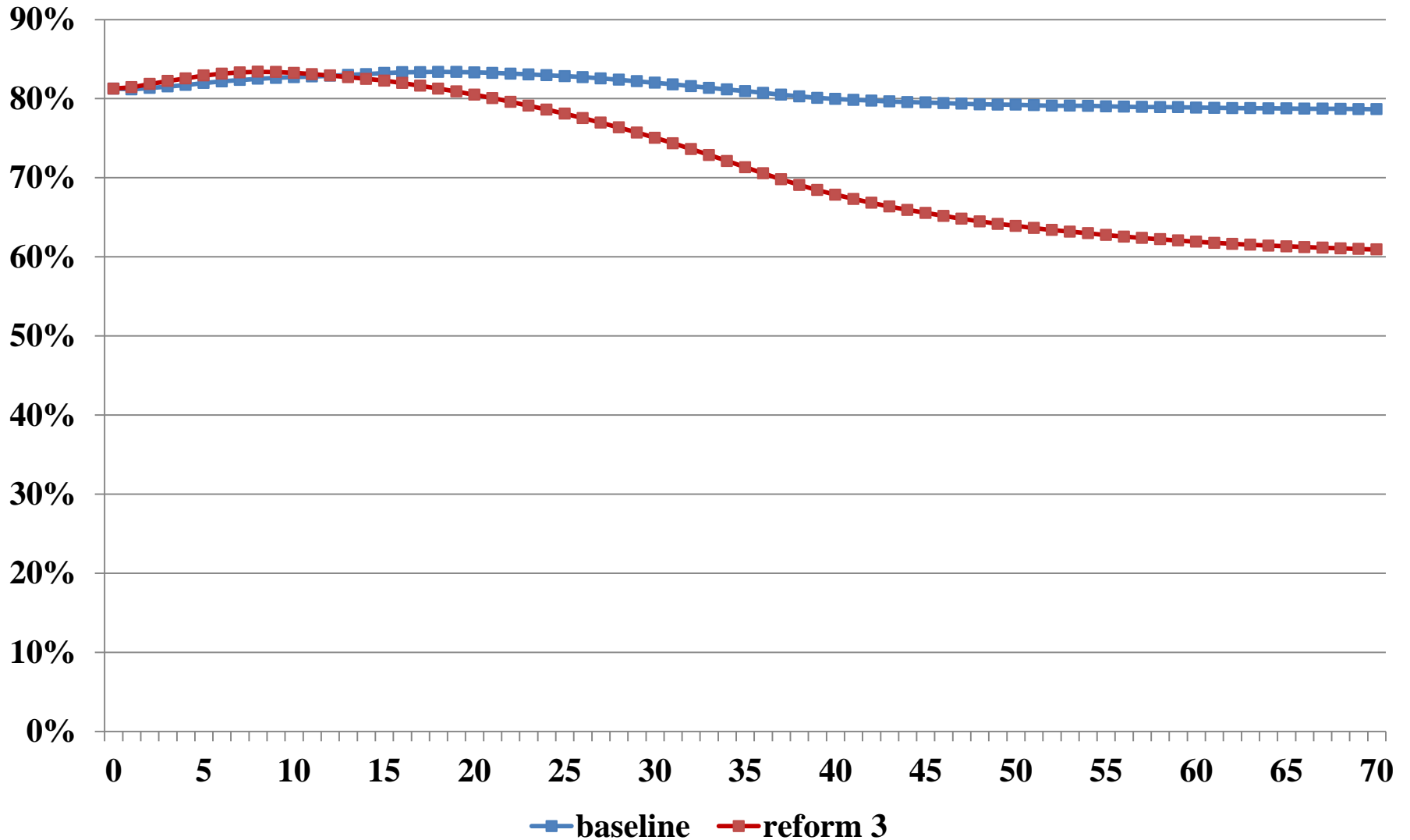


Reform 3: Increasing Averaging Period

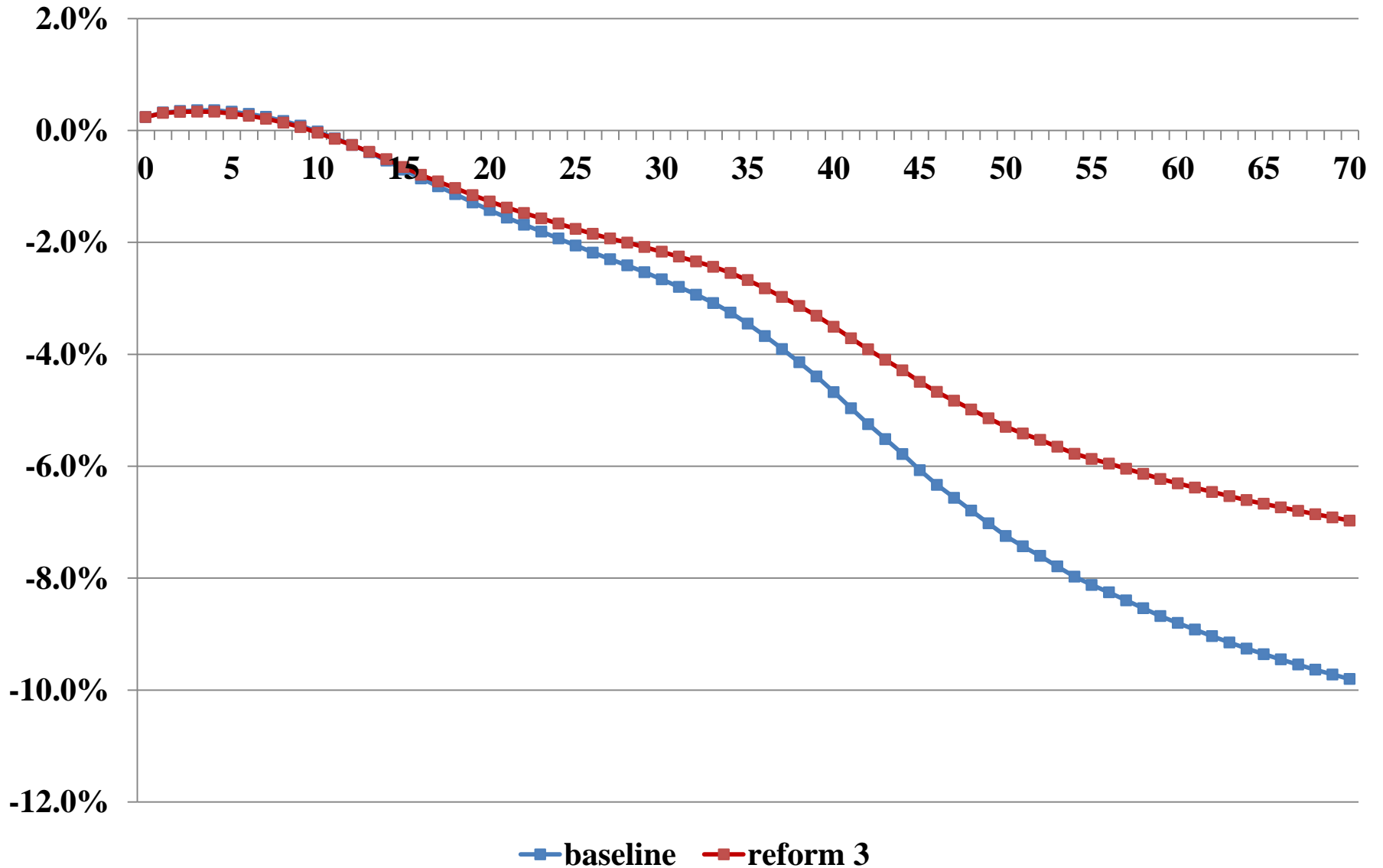
Average Replacement Rates for New Old Age Pensioners (% of average wage)



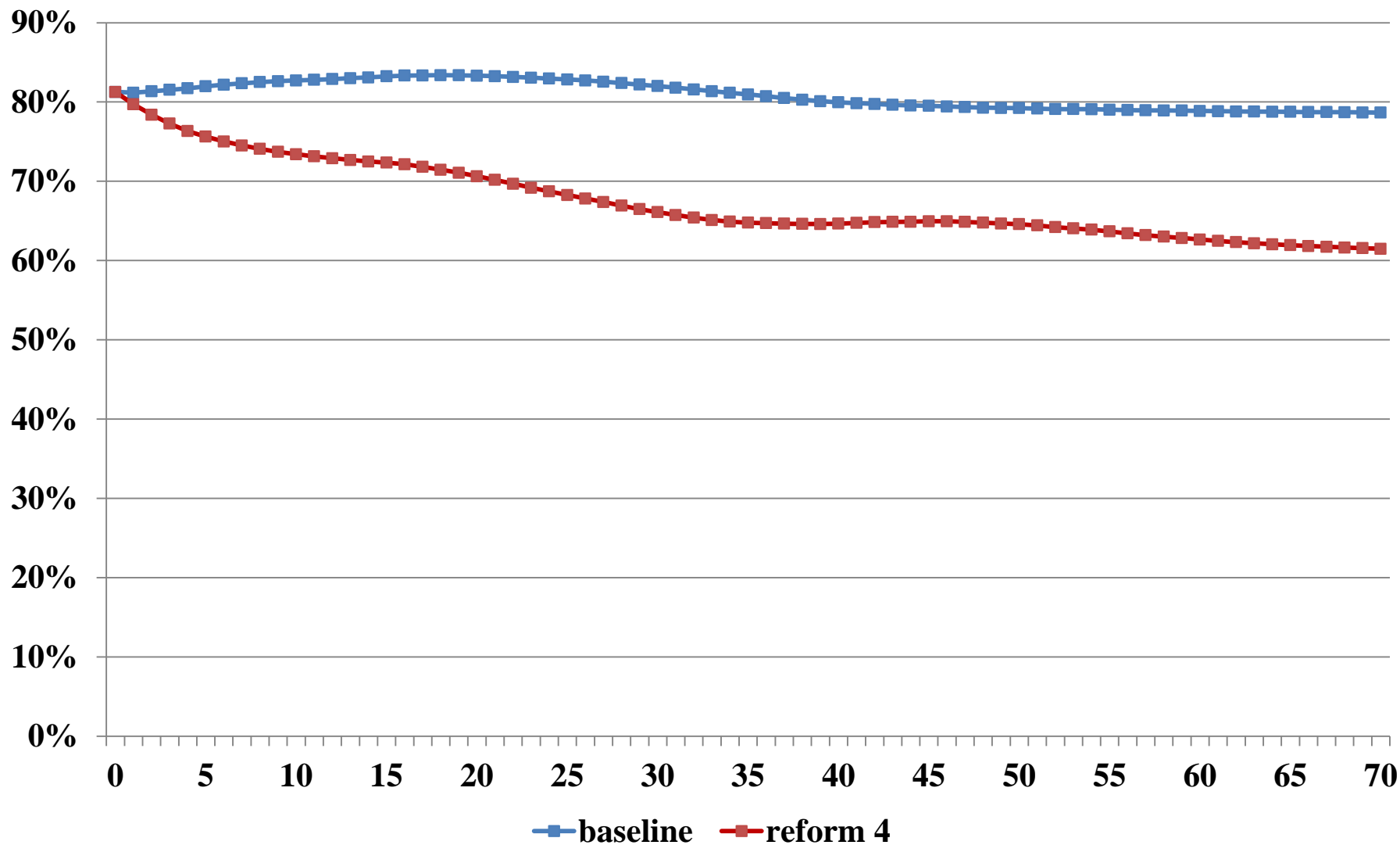
Reform 3: Increasing Averaging Period Average Replacement Rates for All Old Age Pensioners (% of average wage)



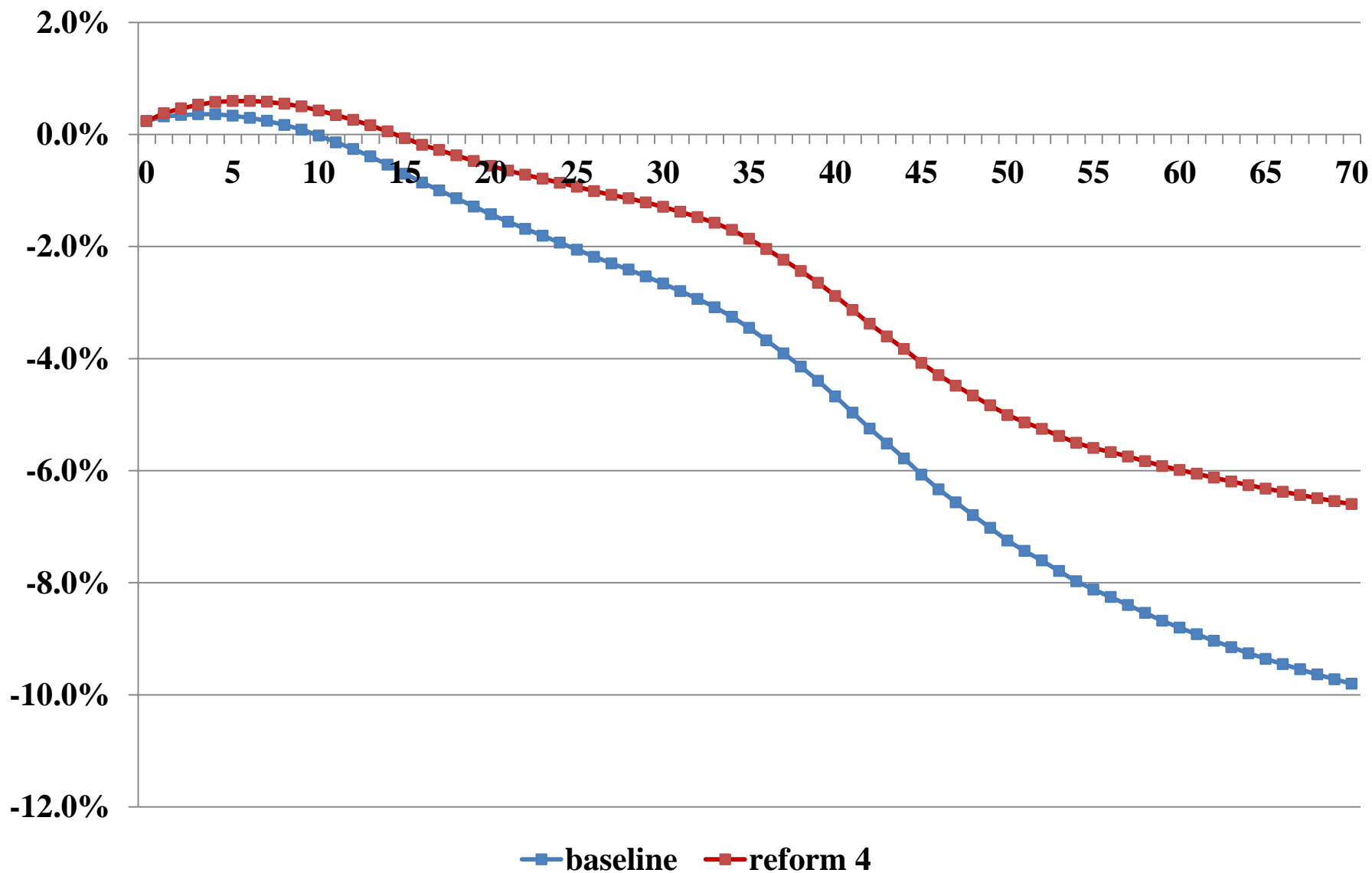
Reform 3: Increasing Averaging Period Annual Current Balance, % of GDP



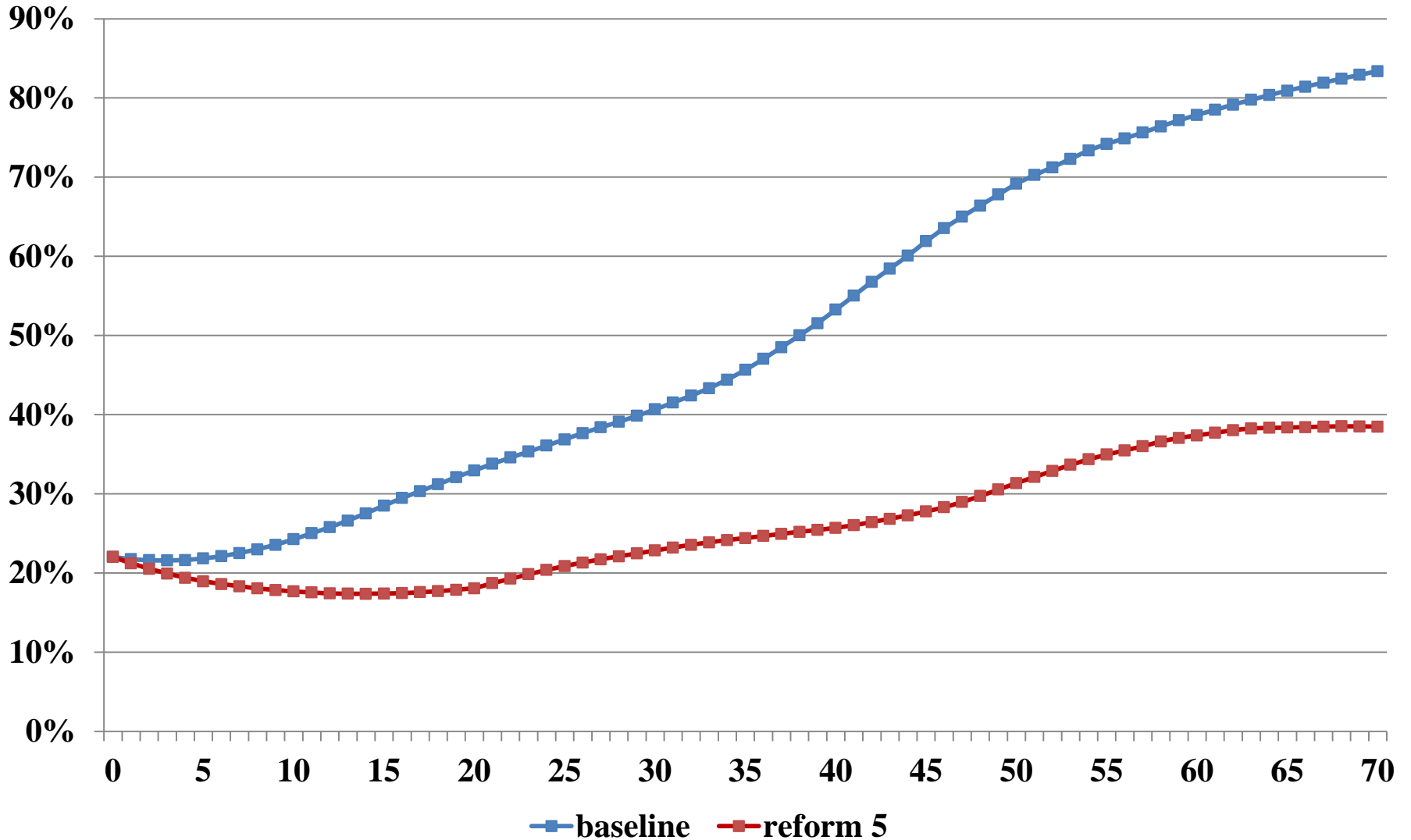
Reform 4: Switching from Wage to Price Indexation
Average Replacement Rates for All Old Age Pensioners
(% of average wage)



Reform 4: Switching from Wage to Price Indexation Annual Current Balance, % of GDP

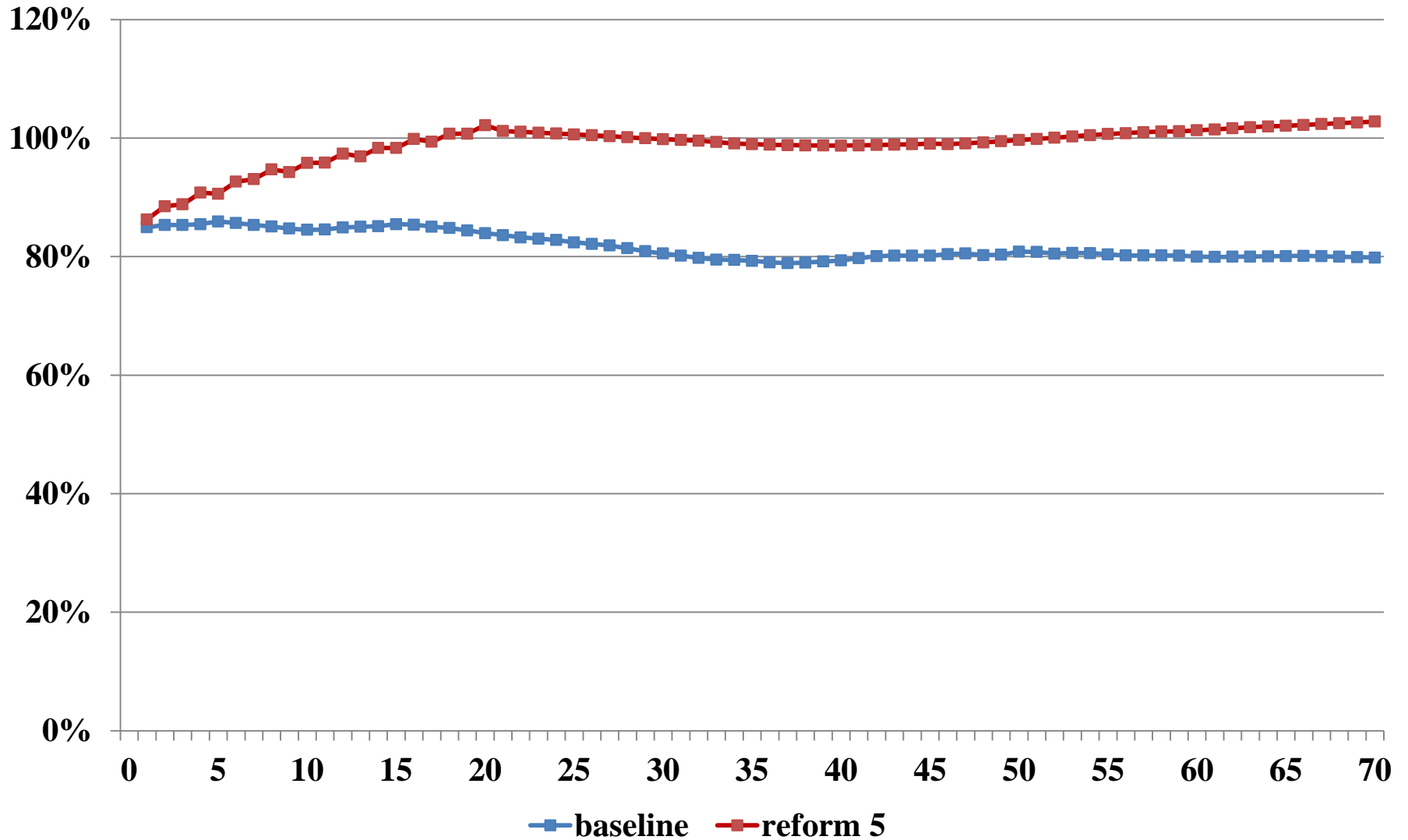


Reform 5: Raising Retirement Age
System Dependency Rate
(number of all pensioners/number of contributors)

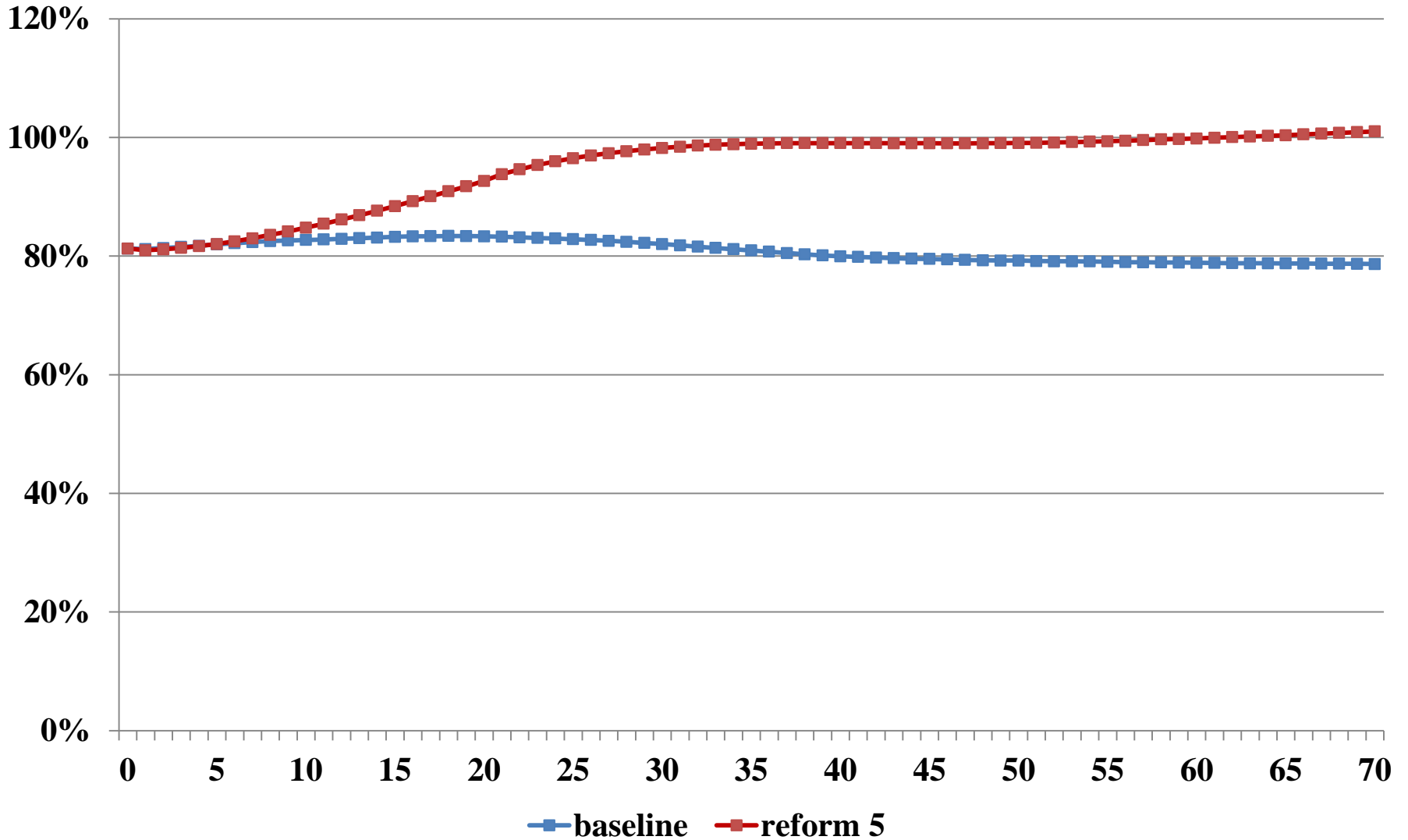


Reform 5: Raising Retirement Age

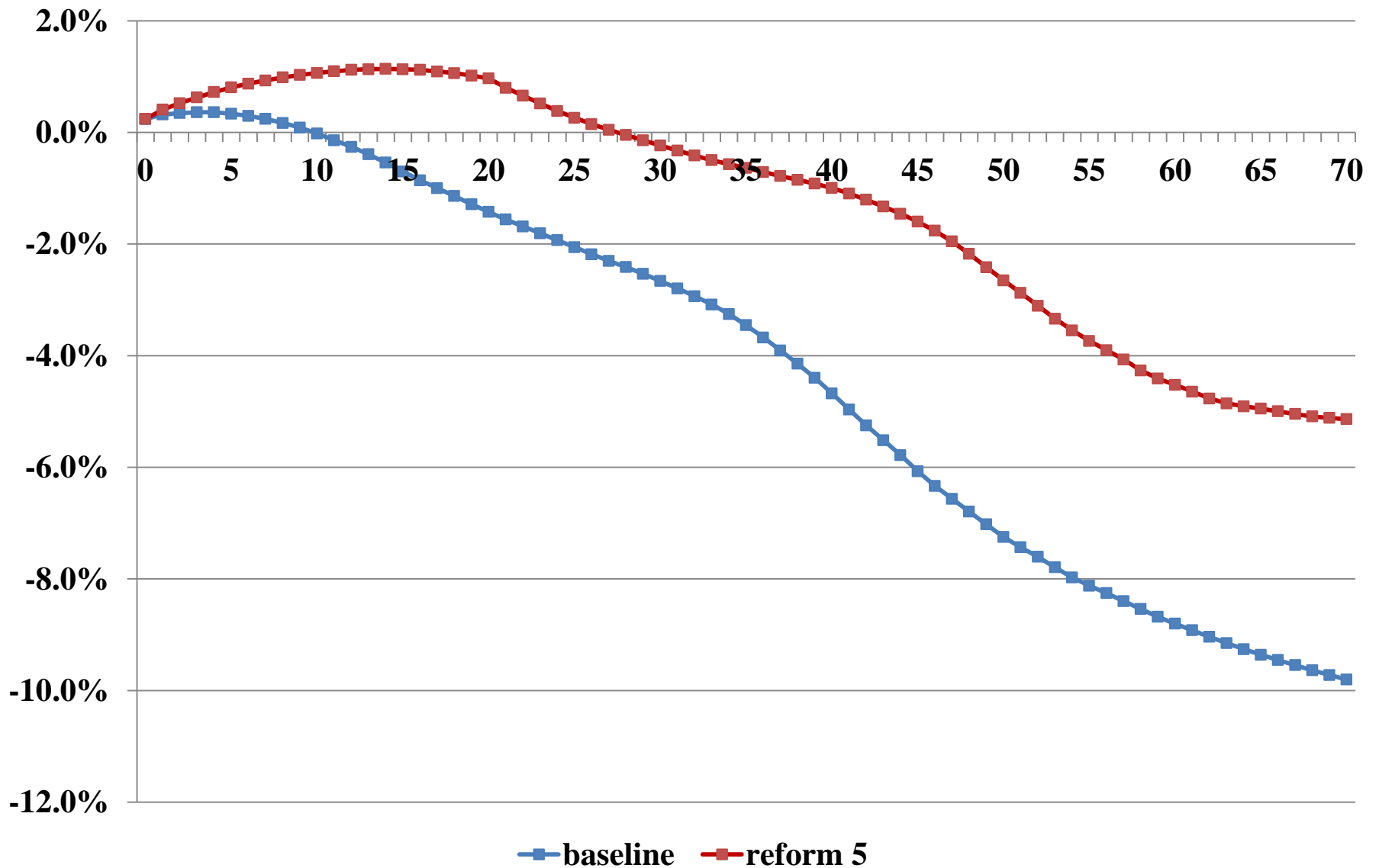
Average Replacement Rates for New Old Age Pensioners (% of average wage)



Reform 5: Raising Retirement Age
Average Replacement Rates for All Old Age Pensioners
(% of average wage)



Reform 5: Raising Retirement Age Annual Current Balance, % of GDP



Thank You!