PENSION REFORM OPTIONS FOR BULGARIA
PROST APPLICATION

WORLD BANK CORE COURSE ON PENSION REFORM
WASHINGTON, D.C., MARCH 2014

OUTLINE

1. Objective of the analysis and country context
2. Modeling impact of recent reforms
   - Projections of system performance under baseline
3. Modeling policy reform scenarios
   - Exploring an alternative financing mechanism
   - Changes to contribution rate, fertility rate, etc.
4. Policy options

OBJECTIVE AND COUNTRY CONTEXT

- **Objective:** Identify reform options for mitigating the economic impact of population ageing
- **Demographic environment**
  - Old-age dependency ratio (65+/15-64) set to double by 2060
  - Share of working-age population in total set to decline by 15 percentage points by 2060
  - Share of population 65+ in total population set to increase by 15 percentage points by 2060
  - Fertility rate at 1.5 children per woman
  - Life expectancy at birth 77.4f/70.6m
  - Life expectancy at official retirement age(63f/65m) 18.9f/13.9m
  - Demographic aging further accelerated by steady net emigration
- **Economic environment**
  - Low real GDP growth rate in 2012 of 0.8% (1.8% in 2011)
  - Falling inflation (2011: 3.4%, 2012: 2.4%, 2013: 0.4%)
  - High labor force participation at prime working ages for both men and women
  - Low labor force participation among youth and older workers above the age of 55

OVERVIEW OF THE PENSION SYSTEM

Pillar 0	Pillar I	Pillar II	Pillar III
Non-contributory social pension	Defined Benefit Earnings-Related	Defined Contribution Earnings-Related	Defined Contribution Earnings-Related
State Budget Financed	Pay-as-you-go (PAYG)	Fully Funded	Fully Funded
Universal	Mandated (employed, self-employed, farmers)	Mandated for individuals born after 1959	Voluntary

DESIGN FEATURES OF THE PENSION SYSTEM

- Pillar 0
  - Objective: **poverty prevention**
  - Eligibility: age 70 (legislated)
  - Benefit level: 110/136 leva (20% of avg. monthly salary)
- Pillar I
  - Objective: **income replacement (with some progressivity)**
    - Old age
      - Eligibility: Age 65m/63f, LOS 40m/37f years
      - Benefit level: 289 leva (42.2% of avg. monthly salary)
    - Disability and Survivor
      - Eligibility and benefit level depends on degree of disability, years of contribution, age
- Pillars II and III
  - Objective: **savings for income replacement**
  - Benefit level: based on accumulated savings

REFORMED PAYG DESIGN

- Contributory Programs: old age, disability, survivorship, work injury
- Contribution Rate
  - Non-switchers: 17.8% to Pillar I
  - Switchers: 12.8% (Pillar I) and 5% (Pillar II)
  - Government: 12% of insured income
- Eligibility conditions for an old age pension (implementation of legislated reform suspended as of 2013)
  - Age: 65m/63f
  - Service: 40m/37f years
  - No early retirement under normal labor category
- Eligibility conditions for a minimum contributory pension
  - Age 67 with 15 years of contributions
  - Amount set at around 20% of average insured wage
- Old age pension amount dependent on:
  - accrual rate (1.2% and 4% for deferred pension)
  - lifetime wages
- 100% wage valorization
- 100% pension indexation to inflation

PILLAR I MAIN PERFORMANCE INDICATORS

- Coverage rate: 55% of the working age population
- System dependency rate: 80% (2011)

  Number of pensioners to 100 insured persons
- Average old age pension: 42% of average wage (2011)
- Total pension expenditure: 9.4% of GDP (2011)
  - Public system in deficit
  - The government became a "third insurer" in 2009 contributing at 12% of covered wage bill
  - Employee/employer contributions finance only about half of pension expenditures

IMPACT OF CURRENT REFORMS

DATA REQUIREMENTS

- Population and labor parameters (fertility rates, mortality rates, net immigration, etc.)
- Labor market parameters
- General country indicators (GDP, inflation, minimum wage, etc.)
- Pension system indicators (PAYG system)
  - Average covered wage
  - Contribution rate for employers and employees
  - Contribution ceiling
  - Retirement age
  - Indexation mechanism
  - Minimum pension
  - Benefit formula for old-age pension calculation (accrual rate, length of service, base salary, etc.)
  - Pension expenditures by gender and program
  - Total number of pensioners by age, gender and program
  - Total number of contributors by age and gender

PROST ASSUMPTIONS

Demographic, macroeconomic, coverage, labor force participation, retirement behavior

- Labor force participation rate constant at base year level
- No assumptions related to coverage expansion
- Preserving the same retirement pattern in modeling the increase in the retirement age
- Assuming all legislated reforms are implemented according to the law

PROST ASSUMPTIONS – EXAMPLE TABLES

Macroeconomic Trends	2013	2014	2015	2016	2017	2018	2019	2020	2040	2050	2055	2065	2075
Real GDP Growth	1.9%	3.1%	3.7%	4.0%	4.0%	3.7%	3.5%	3.2%	1.1%	0.7%	0.8%	0.4%	0.4%
Real Wage Growth	2.0%	2.4%	2.8%	3.4%	3.1%	3.0%	2.9%	2.9%	2.3%	1.6%	1.5%	1.5%	1.5%
Inflation Rate	3.4 %	2.4 %	2.6 %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

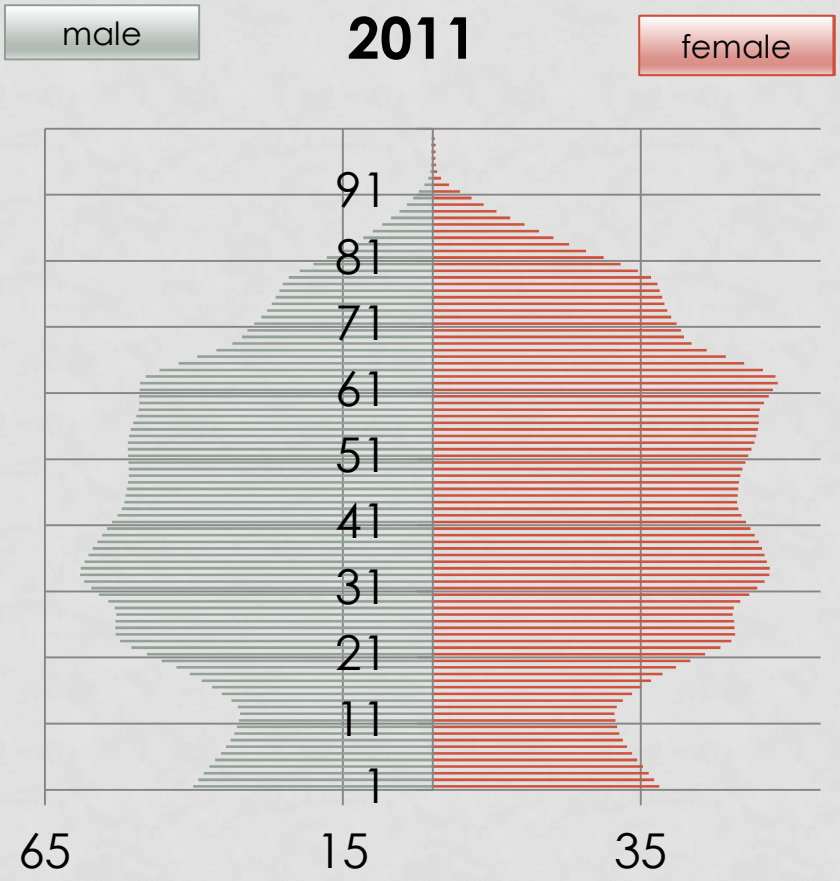
Gender/Age	2011	2015	2030	2035	2040	2045	2055	2065	2075
Male									
Life Expectancy: At Birth	68.8	70.0	72.7	73.2	73.8	74.3	75.4	76.6	77.8
At Age 20	52.3	53.0	54.7	55.1	55.4	55.8	56.7	57.5	58.5
At Age 60	17.0	17.5	18.6	18.9	19.2	19.5	20.1	20.8	21.5
At Age 65	13.6	14.0	15.0	15.2	15.5	15.7	16.3	16.9	17.6
Female									
Life Expectancy: At Birth	72.5	74.0	77.3	78.1	78.8	79.5	80.9	82.5	84.1
At Age 20	55.1	56.2	58.8	59.4	60.0	60.6	61.8	63.1	64.6
At Age 60	18.9	19.6	21.4	21.9	22.4	22.8	23.8	24.9	26.1
At Age 65	15.1	15.7	17.3	17.8	18.2	18.6	19.5	20.5	21.6

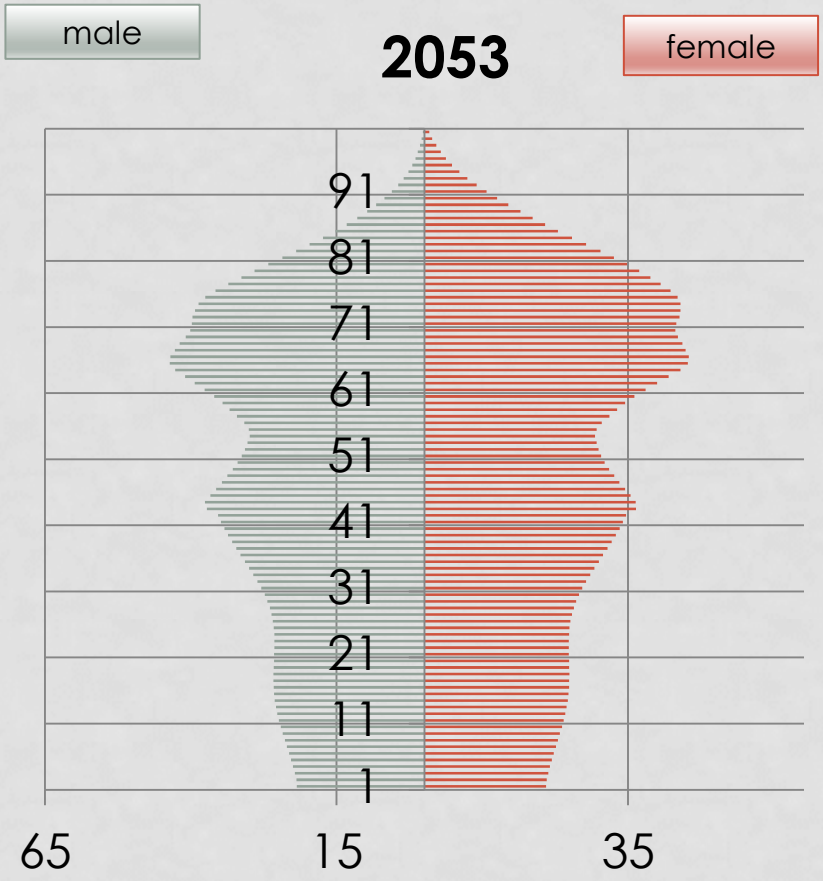
ANALYSIS OF PAYG PERFORMANCE

- Once all the input data is entered, the user can perform simulations
- Population projections (simulate how the age composition of the population will evolve over the projection horizon)
  - Obtain system dependency rate (ratio of beneficiaries to contributors)
  - Fiscal sustainability
    - Project revenues and expenditures
    - Pension expenditures as a share of the economy
    - Implicit pension debt
  - Benefit adequacy
    - Project replacement rates
    - Share of pensioners receiving the minimum pension
  - Coverage
    - Project the share of population that will have rights to a PAYG pension (based on current contribution patterns)

DEMOGRAPHIC TRENDS AND IMPLICATIONS

PROST Population Pyramid



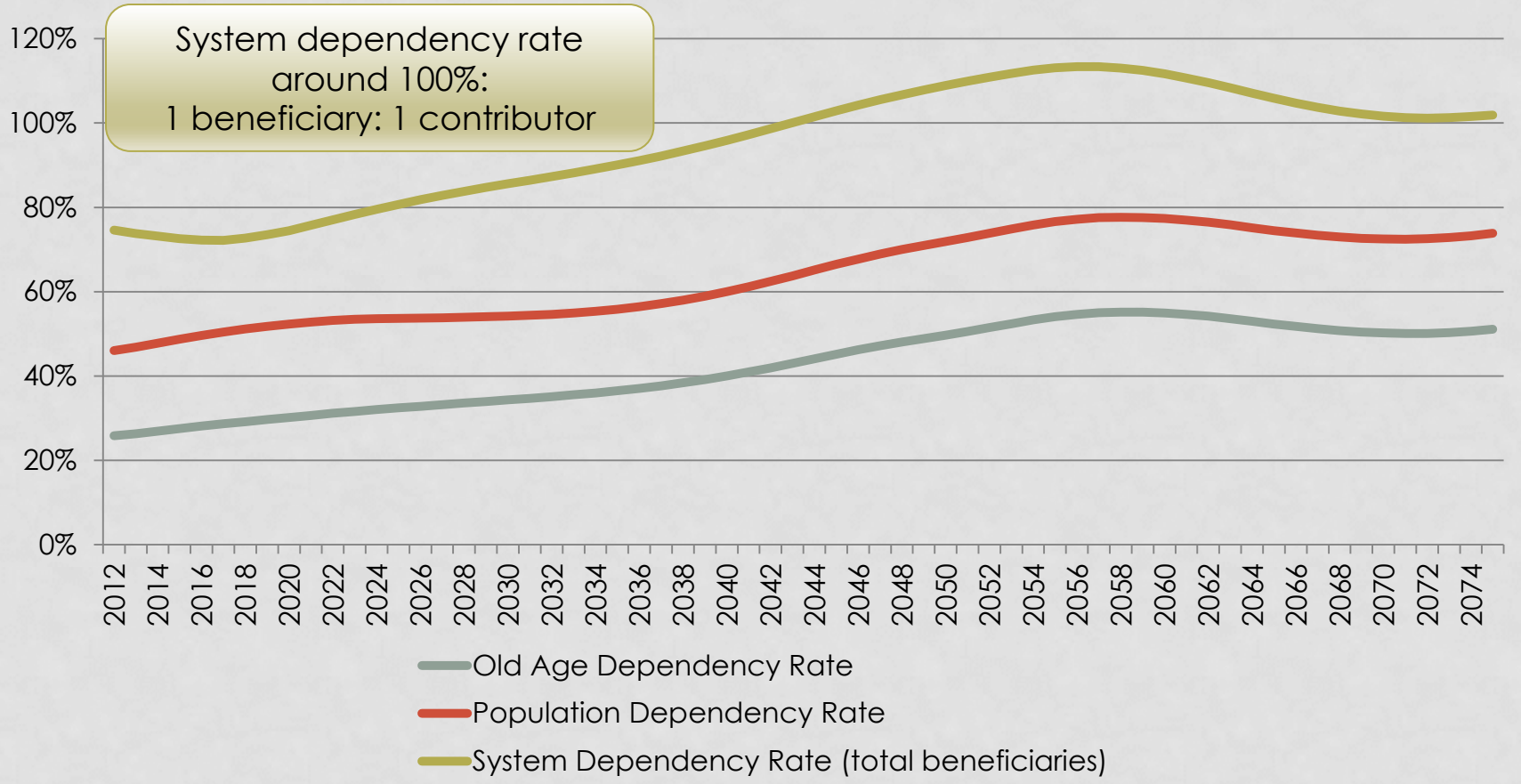


DEMOGRAPHIC TRENDS AND IMPLICATIONS (2)

- PROST helps us see what the retirement age should be if we want to maintain the same duration of retirement in the future
- Recent reforms to the retirement age (63m/60f → 65m/63f) will be offset by gains in life expectancy, calling for further increases beyond 65

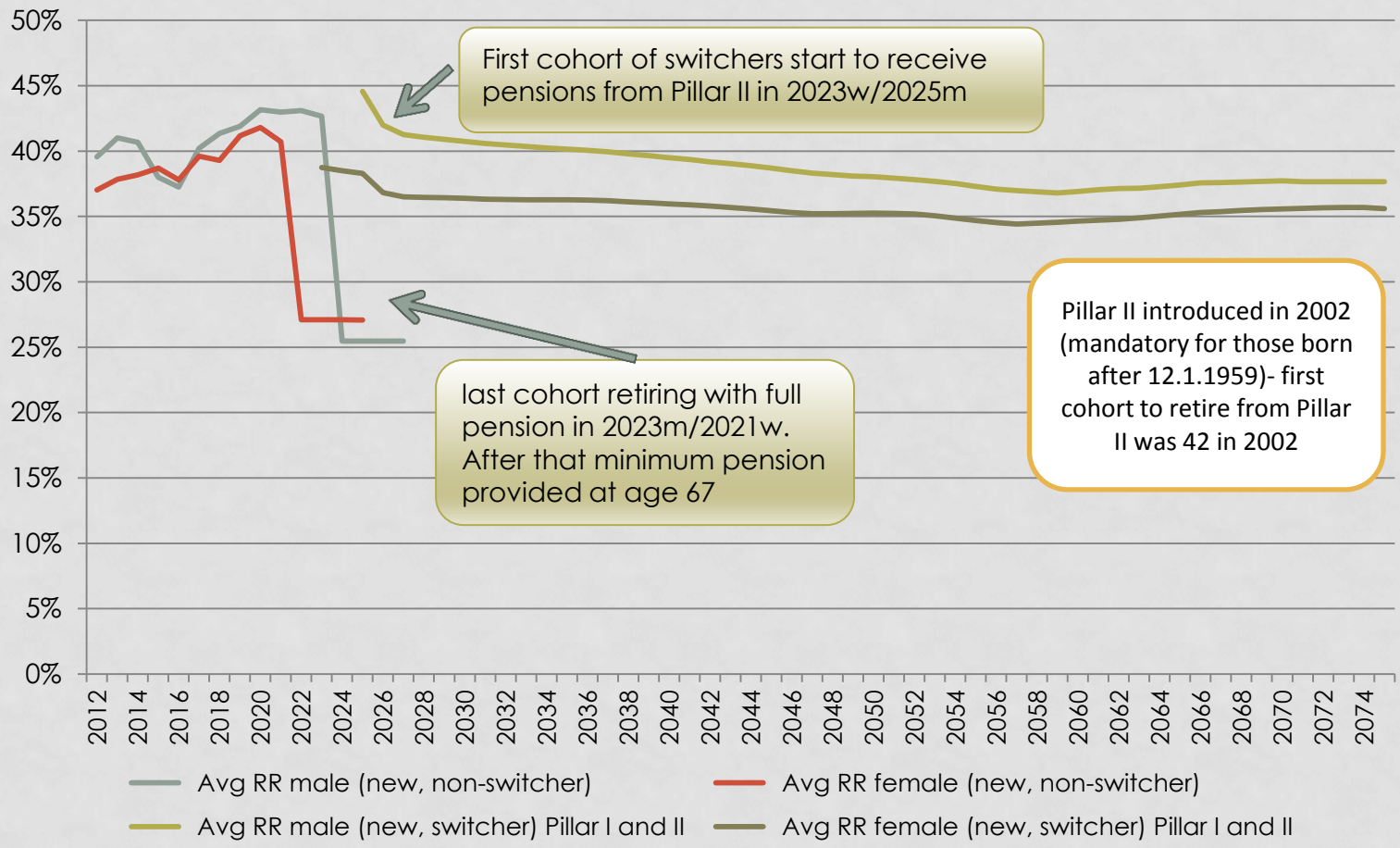
	2013		2075		Age at which life expectancy at retirement in 2075 same as in 2013
	Ret. Age	LE at Ret. Age	Ret. Age	LE at Ret. Age	
male	63.8	14.4	65	17.6	70
female	60.8	18.4	63	23.4	69

PROJECTED DEPENDENCY RATES



12.8% PAYG contribution rate could only afford to pay 12% PAYG replacement rate

PROJECTED AVERAGE REPLACEMENT RATE FOR A NEW OLD AGE PENSIONER



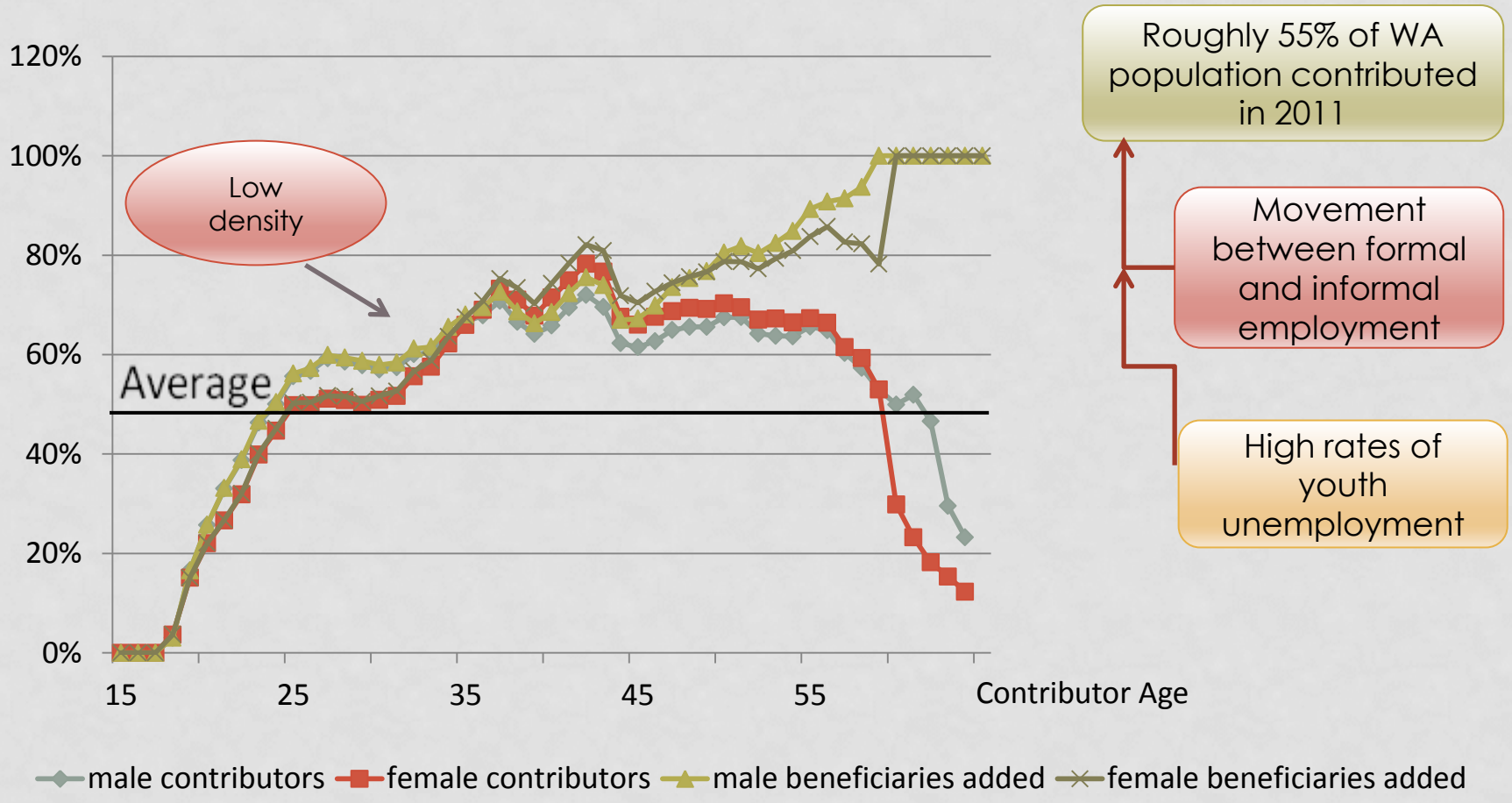
PROJECTED AVERAGE REPLACEMENT RATE FOR AN EXISTING OLD AGE PENSIONER

Funded Pillar Replacement Rate: Assuming real interest earned on individual account is 3 percent annually. Investment risk is fully borne by the individual

PROJECTED REPLACEMENT RATES AND ADEQUACY

- In Bulgaria, close to 40% of contributors insured at half of average insured wage
- Another 20% insured at the minimum wage
- Even with full careers, many people will receive a pension that is close to the value of the minimum contributory pension
  - This could further damage contribution compliance – "why contribute past 15 years if the additional increase for contributing 37/40 is not that significant"
  - It also raises concerns about the adequacy of the pension benefit for lower income earners

COVERAGE OF THE WORKING AGE POPULATION

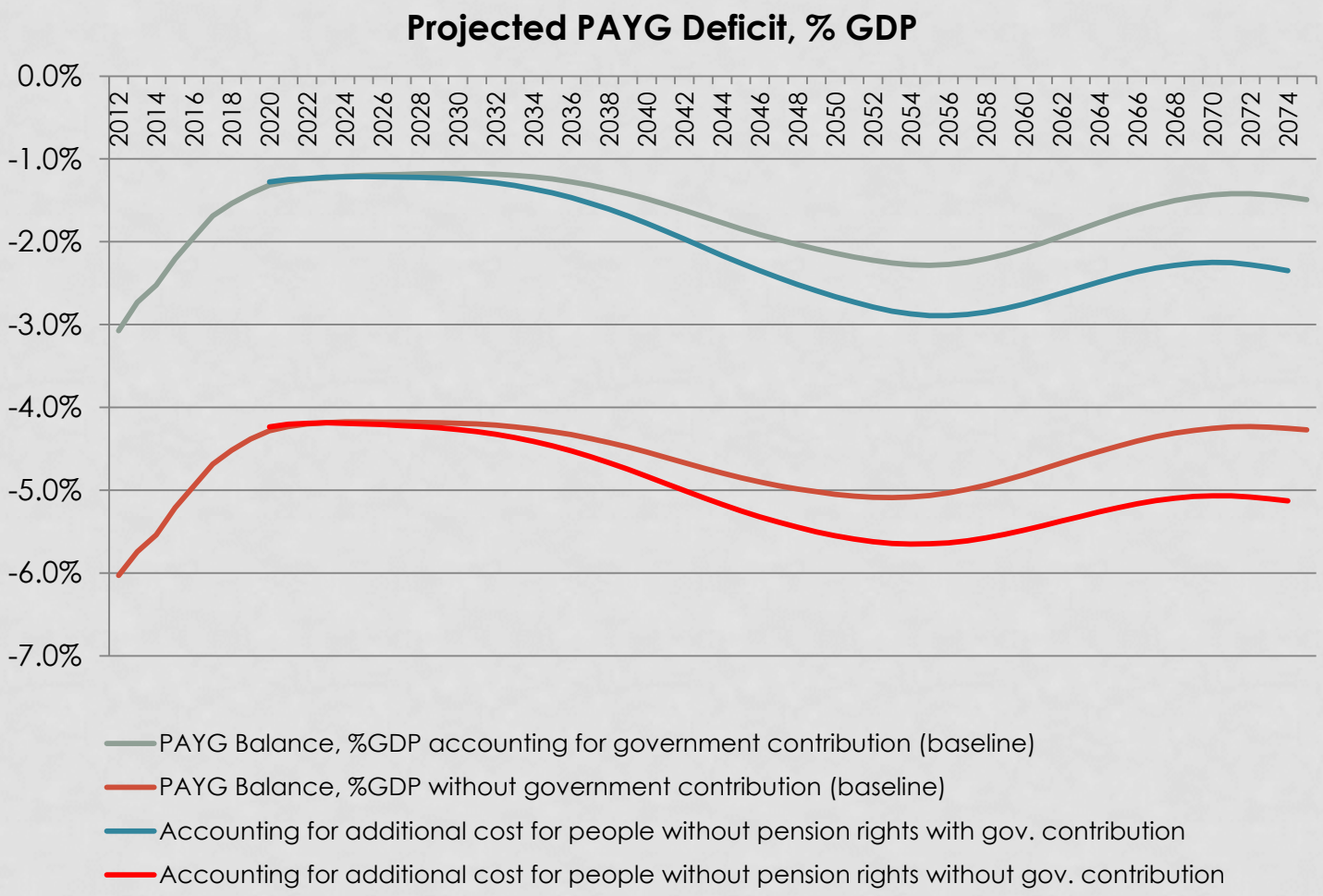


COVERAGE OF THE WORKING AGE POPULATION (2)

- Low coverage today will translate into a growing number of elderly without pension rights in the future
- The current almost universal coverage among the elderly (due to full employment during the Soviet era) will not continue going forward

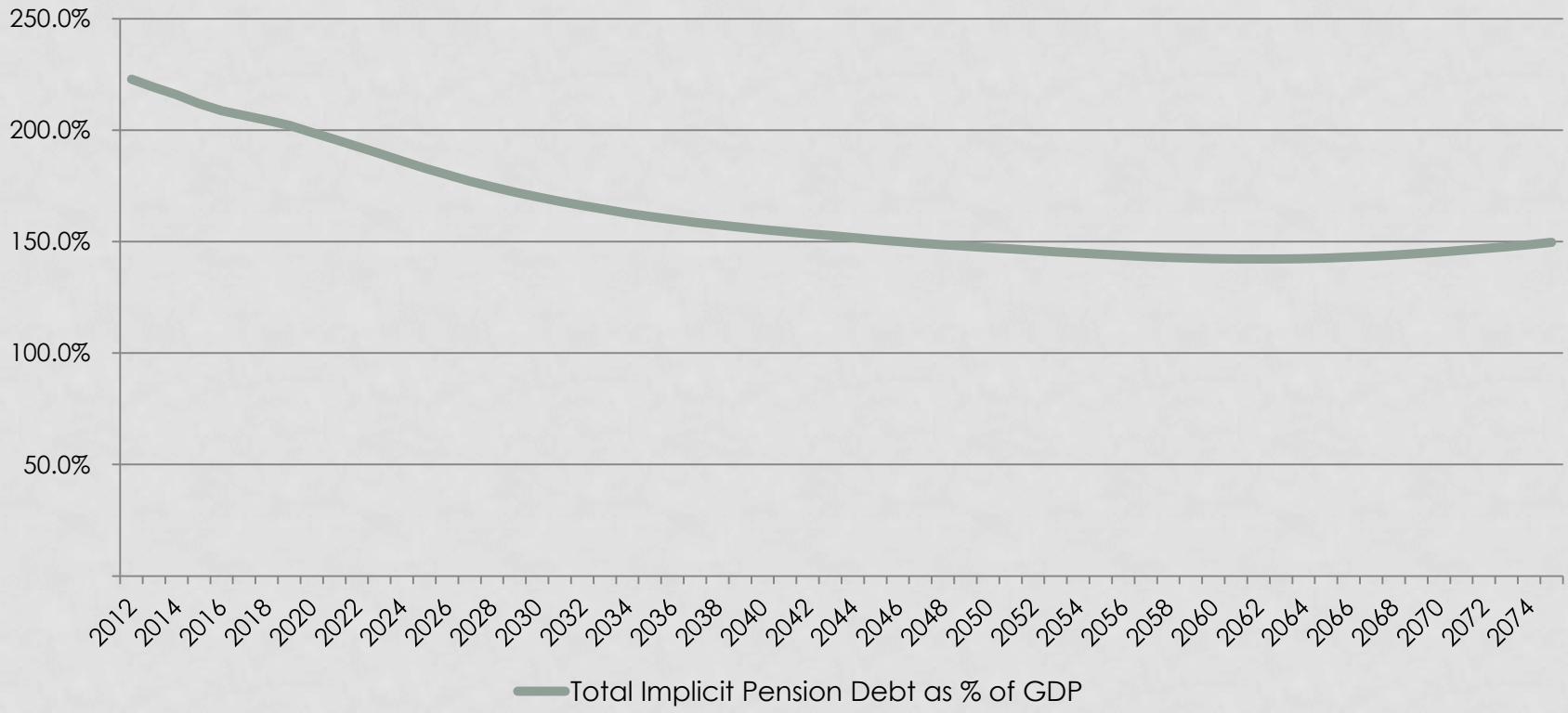
Adjusted pensioners as a percent of the population	age/gender	2012	2050	2075
full pension	female (age 63)	74	54	51
full pension	male (age 65)	92	53	49
minimum contributory pension	female (age 67)	21	22	19
minimum contributory pension	male (age 67)	3	21	18

PROJECTED ANNUAL CURRENT BALANCE, % GDP



Graph on the left shows the projected deficit with and without the estimated additional cost of financing social pensions for people without rights to the pension system

PROJECTED IMPLICIT PAYG PENSION DEBT, % GDP



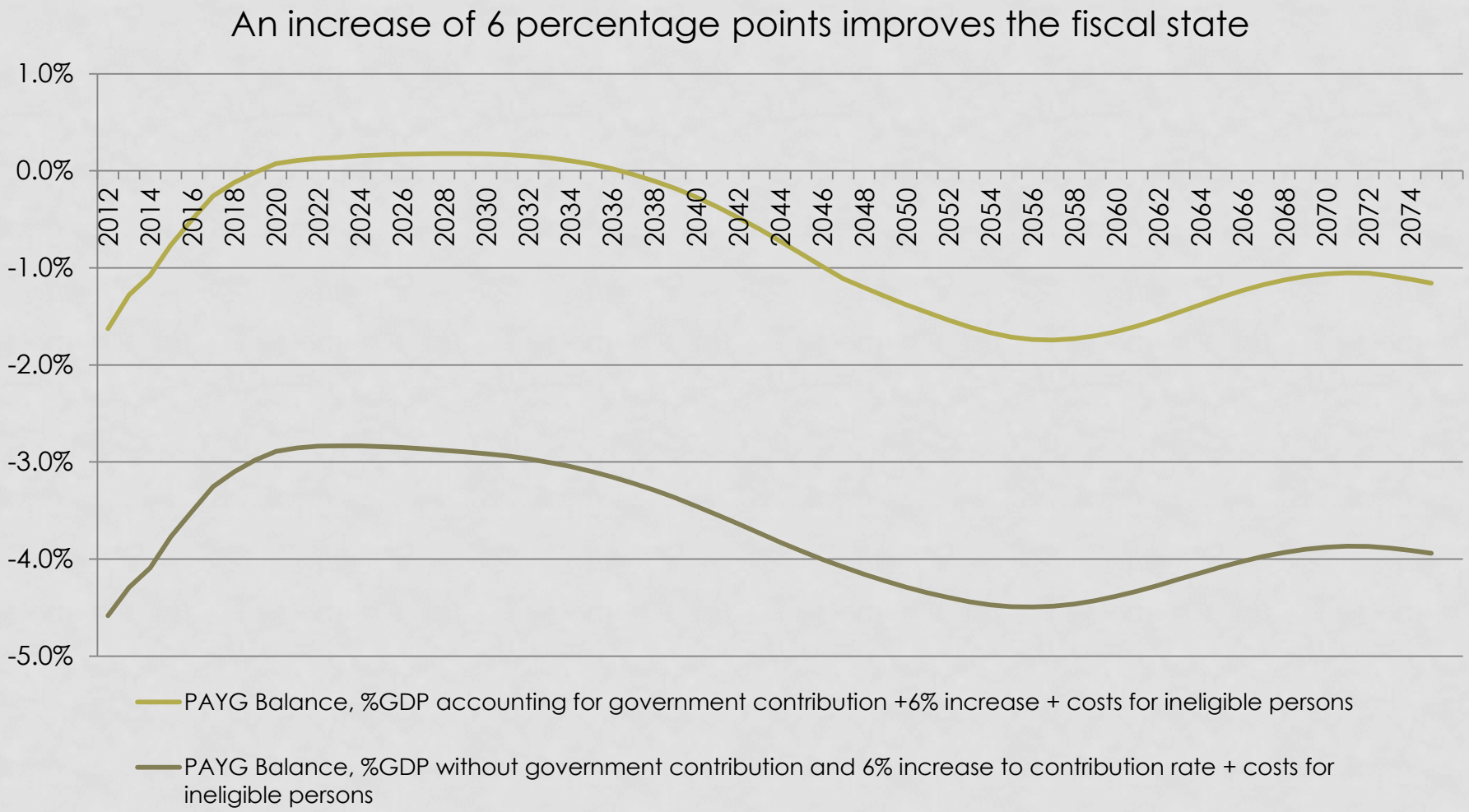
Discount rate: 3%
Method: Accrued to date liabilities

SUMMARY OF KEY FINDINGS

- System dependency rates projected to increase further, resulting in additional fiscal pressures
- Coverage among the elderly projected to contract
  - Additional fiscal pressure arising from the need to provide non-contributory pension to those without rights to a pension (about 30% of future elderly)
- Large government role in financing social insurance will lead to a highly inequitable system
  - Using general revenue financing to subsidize a select group of people (most likely the wealthier ones anyways)
- Little room to reduce the generosity of benefits
- Space to increase retirement ages beyond 65

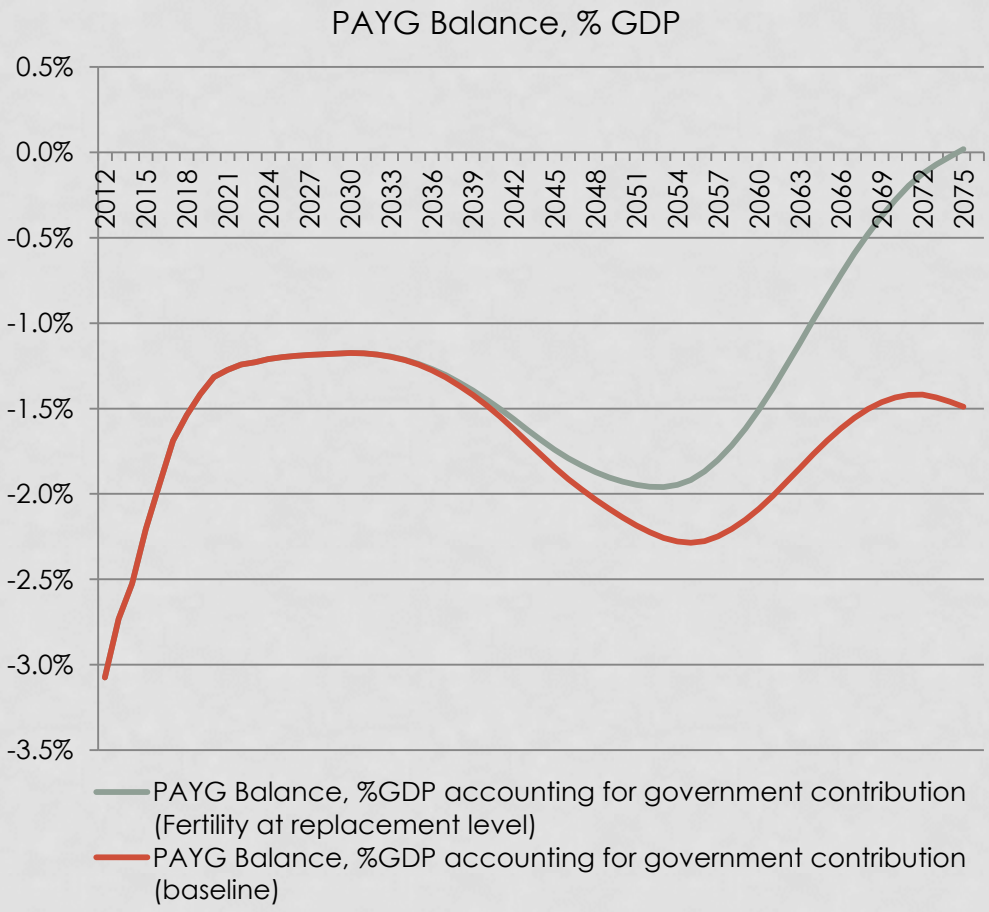
POLICY OPTIONS

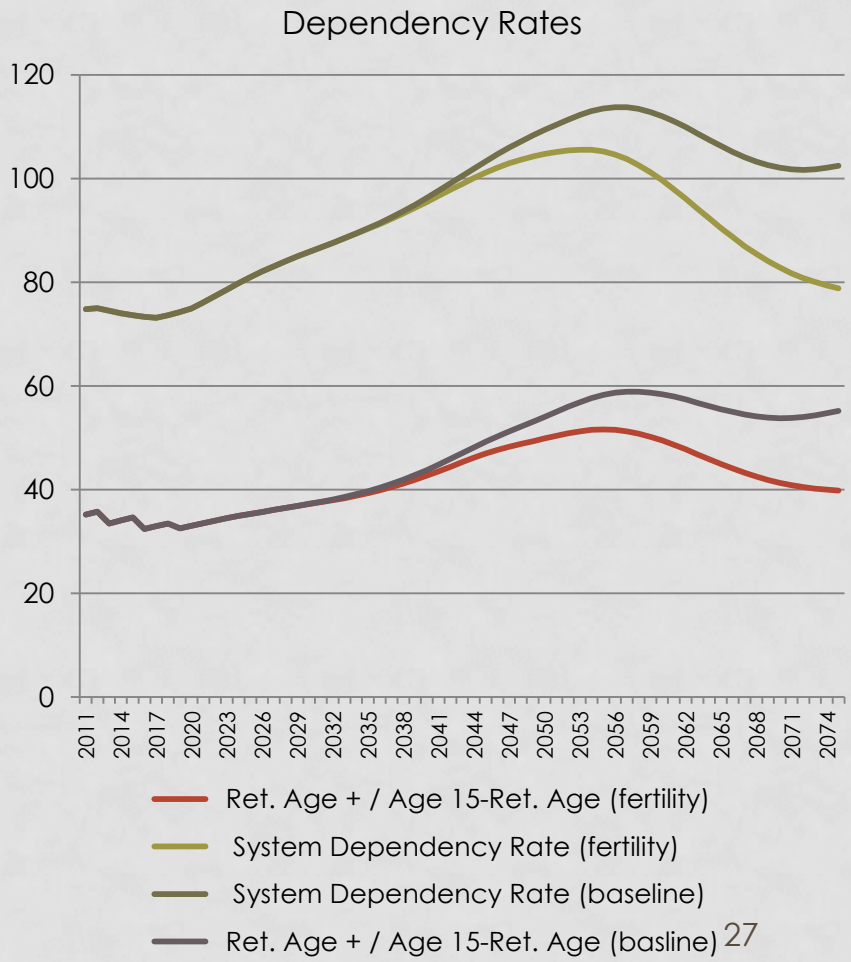
AN INCREASE TO THE CONTRIBUTION RATE



HIGHER FERTILITY RATE

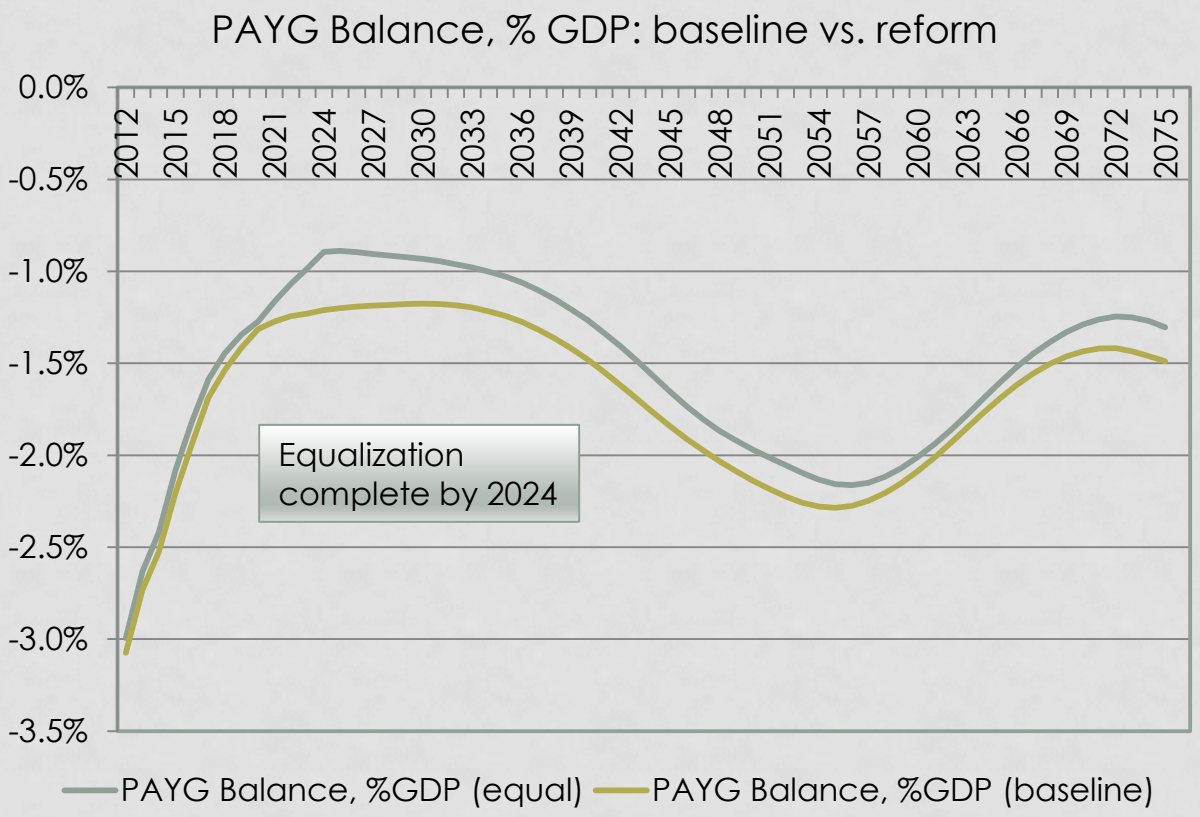
A higher fertility rate (2.2 from 1.5) does not yield an impact in time. Changes are only apparent starting in 2050. This is due to smaller cohorts of women of reproductive age today due to a significant post-transition drop (early 1990s) in fertility rates and outmigration.





EQUALIZATION OF RETIREMENT AGES BETWEEN MEN AND WOMEN AT 65

Projected fiscal savings (2024-2050) of about 0.3 percent of GDP (accounting for roughly 20 percent of the system's deficit)



Why the savings are not even greater: Currently the actual difference in effective retirement ages between men and women is smaller than the gap in official retirement ages

Women tend to work until later ages in order to meet the length of service requirement (lower contribution density due to more career breaks, especially due to having children)

On top of that, more men retire before the official pension age because mostly men work under labor categories I and II (dangerous occupations, military, police, etc.) where retirement ages can be lower

CONCLUSIONS AND POLICY RECOMMENDATIONS

Summary of projection results

- An increase of the contribution rate of 6% improves the fiscal state of the public system
- A higher fertility rate improves the fiscal state but not in time to combat the worst of the demographic crisis
- Equalizing retirement ages:
  - yields fiscal savings
  - yields a slightly higher replacement rate for women
  - could lead to positive labor market effects since LFP among people 55+ is quite low

Policy recommendations

- Increase contribution rate (consider potential negative labor market effects)
- Equalize retirement ages to 65 and consider a further increase
- Explore and alternative financing mechanism in order to avoid regressive and distortive outcomes in the future due to low coverage today
  - For example: introducing a universal, non-contributory old age benefit to all individuals of age and a smaller earnings related pension that closely reflects lifetime contributions

Thank you!!!