

11th Regional Pension & Social Insurance Conference for

Amman - May 31, 2005

Financing Healthcare after retirement: A pre-funding Approach

Mr. Ibrahim Muhanna, FCAA, MSAA, FLAA
Managing Director & Actuary

Contents

1. Our Approach to Financial Uncertainties
2. The Complexity of Measuring Healthcare Costs after Retirement
3. Methods of Financing, Financial Implications & Case Study
4. Issues
5. Contacts

**Identifying, Measuring &
Managing**

Financial Uncertainty



An iceberg floating in the ocean. The tip of the iceberg is above the water line, and the much larger base is submerged. The sky is blue with light clouds, and the water is a deep blue. The text is overlaid on the image.

Vision, Goals, Strategies, Plans, Systems

Financial Uncertainty

Culture, Habits, Attitude,
Traditions, Economics,
Demographics,
Political

The Complexity of Measuring Healthcare Costs after Retirement

	Pensions	vs	HealthCare
Earnings	Directly Related		Indirectly Related
Contribution Period	Directly Related		Indirectly Related
Inflation	Indirect Effect		Direct effect
Mortality	Direct Effect		Indirect effect
Morbidity	Lower effect		Higher effect
Anti-selection	Low		High
Benefits	Quantifiable		Unquantifiable
Eligibility	Voluntary		Compulsory
Third Party	Little Effect		Big Effect

Methods of Financing, Financial Implications & Case Study

1. The Problem :

The current pay-as-you-go systems are unsustainable

- Exposed to risk population
- Escalating costs
- Regulatory Issues

2. The answer:

- Actuarial Valuation
- Case Study

Why is pay-as-you-go unsustainable?

This system only works under a relatively stable

- **Dependency ratio environment**
- **Inflation ratio environment**
- **Anti-selection exposure**

Unstable dependency ratios

- Definition : number of beneficiaries to number of financers
- Benefits are paid not out of the accumulated contributions of the recipients themselves but from active workers income.
- Younger generations pay insurance premiums to support the elderly generation.

**As population ages and birth rates decline,
Dependency ratios increase**

Unstable inflation ratios

- Definition : increase in medical costs to increase in wages
- The medical costs are increasing faster than the wages

All other risks such as ageing effects on costs, interest rates and administration costs could be modelled.

Anti-selection Exposure

- Definition : a guarantee insurability and universality of cover.

Utilisation of insured equals twice of non insured

Retiree tend to not join voluntary health plan immediately after retirement.

1. The Problem :

The current pay-as-you-go systems are unsustainable

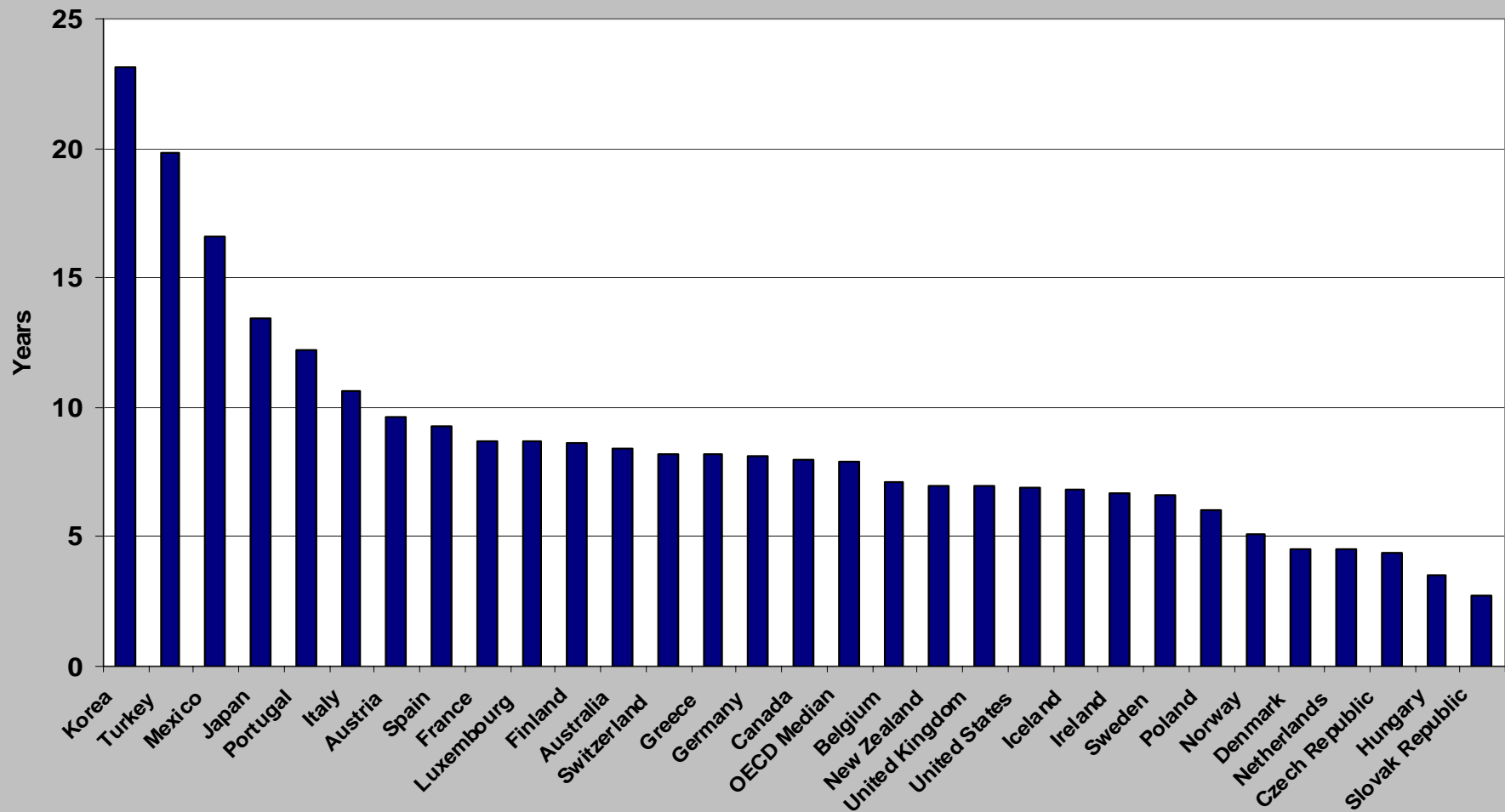
- Exposed to risk population
- Escalating costs
- Regulatory Issues

2. The answer:

- Actuarial Valuation
- Case Study

People are living longer!

Additional Years of Life Expectancy, 1960-2000

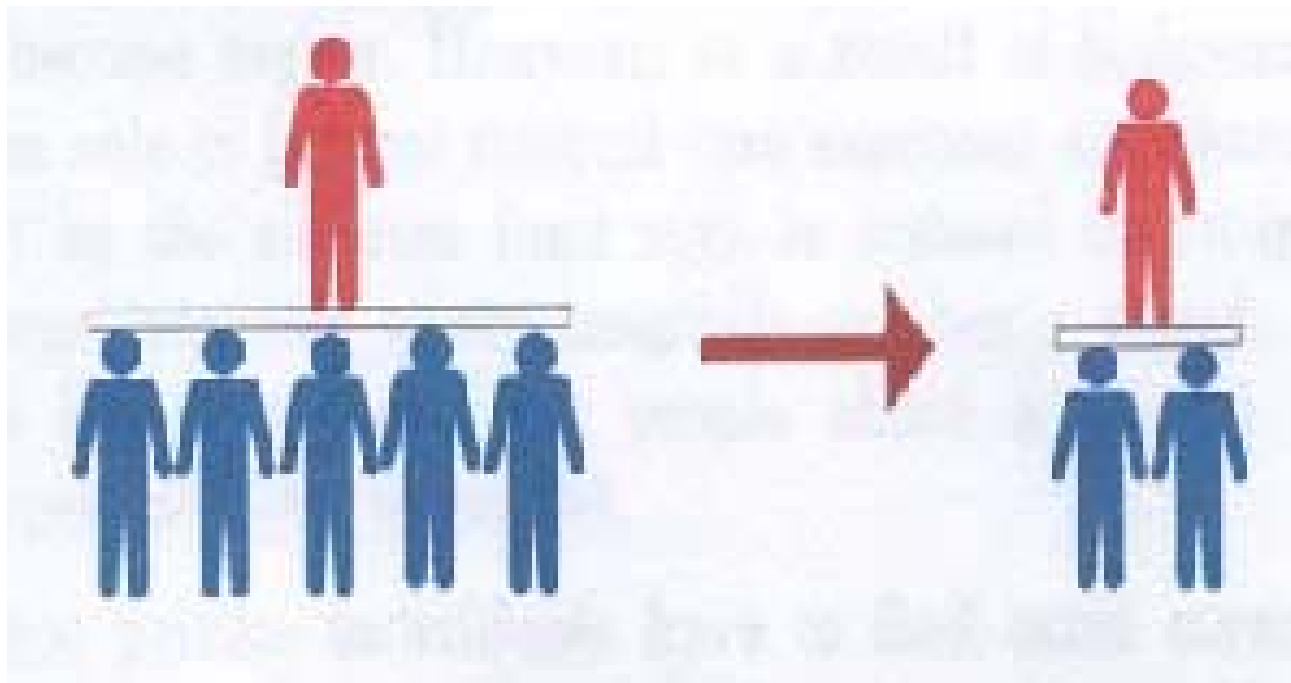


Source: OECD Health Data

Europe

Dependency ratio in 1960: 20%

Dependency ratio in 2020: 50%



1. The Problem :

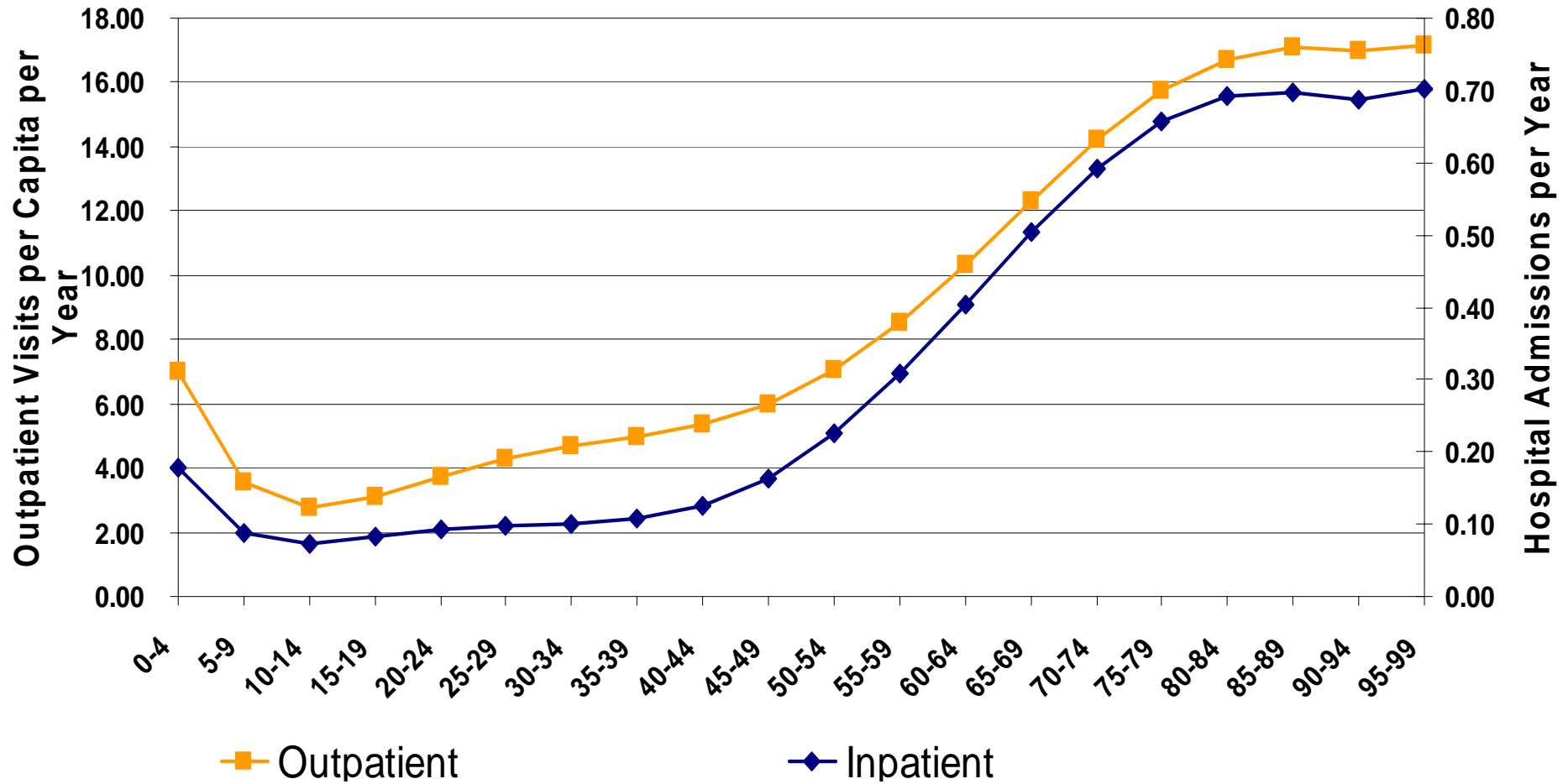
The current pay-as-you-go systems are unsustainable

- Exposed to risk population
- Escalating costs
- Regulatory Issues

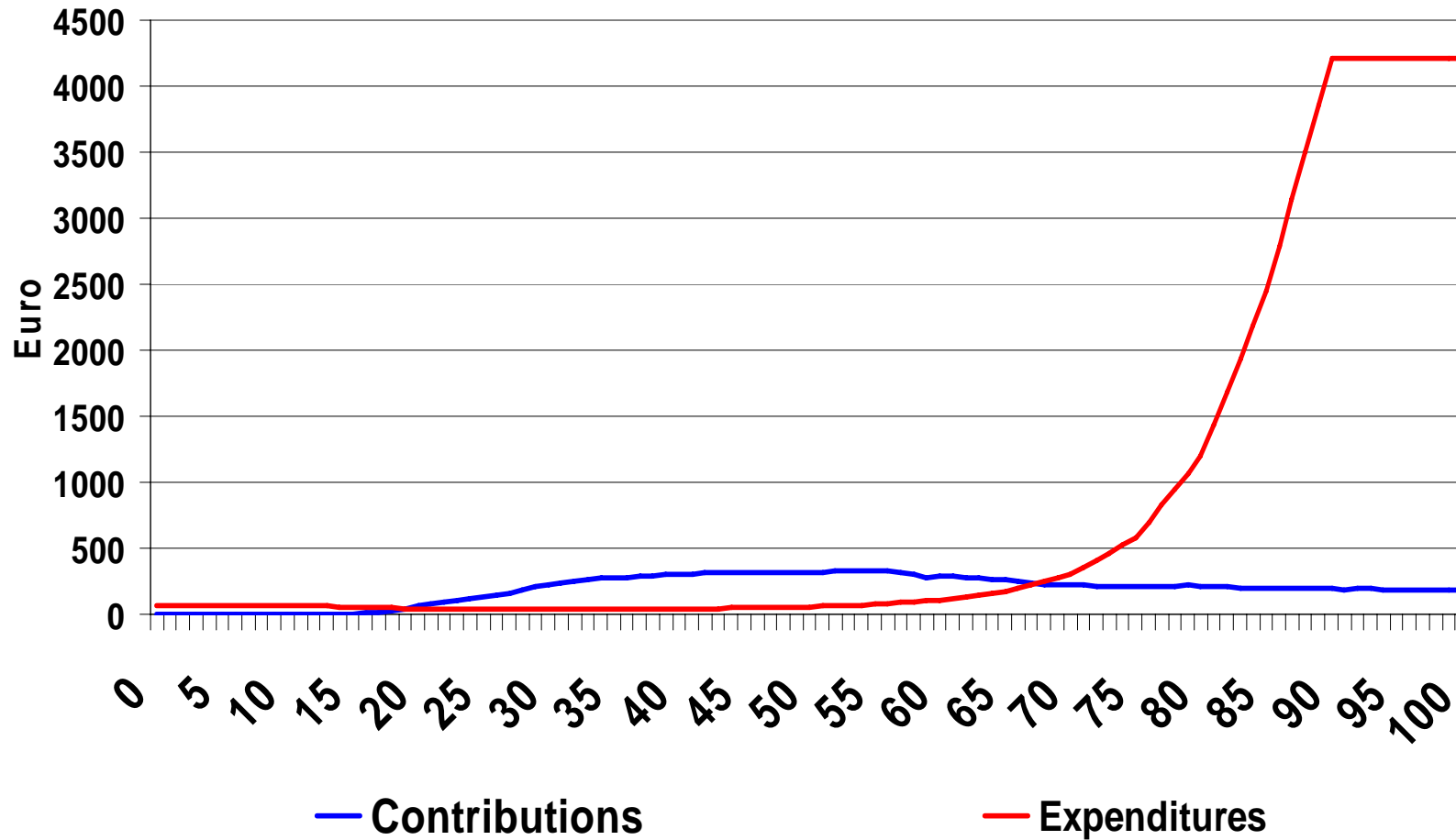
2. The answer:

- Actuarial Valuation
- Case Study

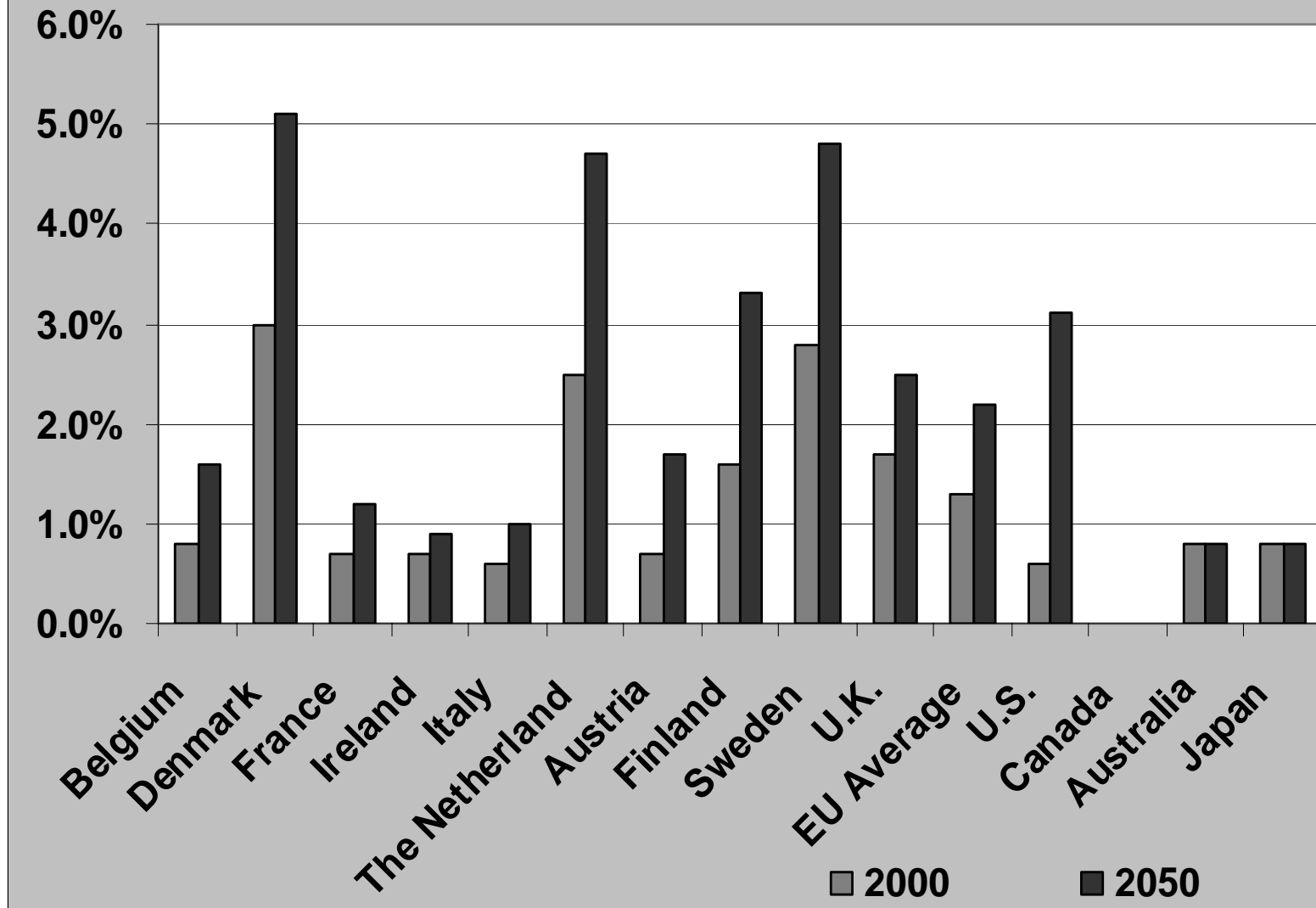
Utilisation by Age Groups



Age-specific Revenues and Expenditures of the German Long-term Care System



Public Long Term Care Spending as % of GDP



- A large increase in health care expenditure is predicted, based on increasing life expectancy and current age-related health-care costs.
- Major causes for the growth in health care spending:
 - * Acceptable standards of care are expected to rise in the future.
 - * the advance in medical technology and patients demands.

1. The Problem :

The current pay-as-you-go systems are unsustainable

- Exposed to risk population
- Escalating costs
- **Regulatory Issues**

2. The answer:

- Actuarial Valuation
- Case Study

International Accounting Standards and Future obligations

- Employer that contributes to a National Health scheme will only put the actual contribution in its books even if the contribution is a pay as you go contribution.
- Employer that have its own company scheme then IAS 19 must apply. i.e. Employer is not forced to fund. However, it is forces to recognize the cost in their books.

National Health Schemes must implement IAS26 and not IAS19. (The IAS 26 is less strict).

International Accounting Standards

- Employer provided future health care benefits is recognized as a current obligation Thus
- Must be properly and fully accounted for
- It is preferable for medical benefits to be funded on an accrual basis **during** an employee's active service and **not after retirement.**

=> **Pre-Funding**

International Accounting Standards

- Because retirees usually received reduced income relative to their salaries under employment
- Pre-funding of medical cover during active service should **reflect the expected future medical costs and the life expectancy of each person covered**
- Under IAS19: apply the Projected Unit funding method for determining the obligations of the employer

1. The Problem :

The current pay-as-you-go systems are unsustainable

- Exposed to risk population
- Escalating costs
- Regulatory Issues

2. The answer:

- Actuarial Valuation
- **Case Study**

**Individual example in the context of
the National System Fund that
provides health care benefits for
the retiree and his dependent
spouse**

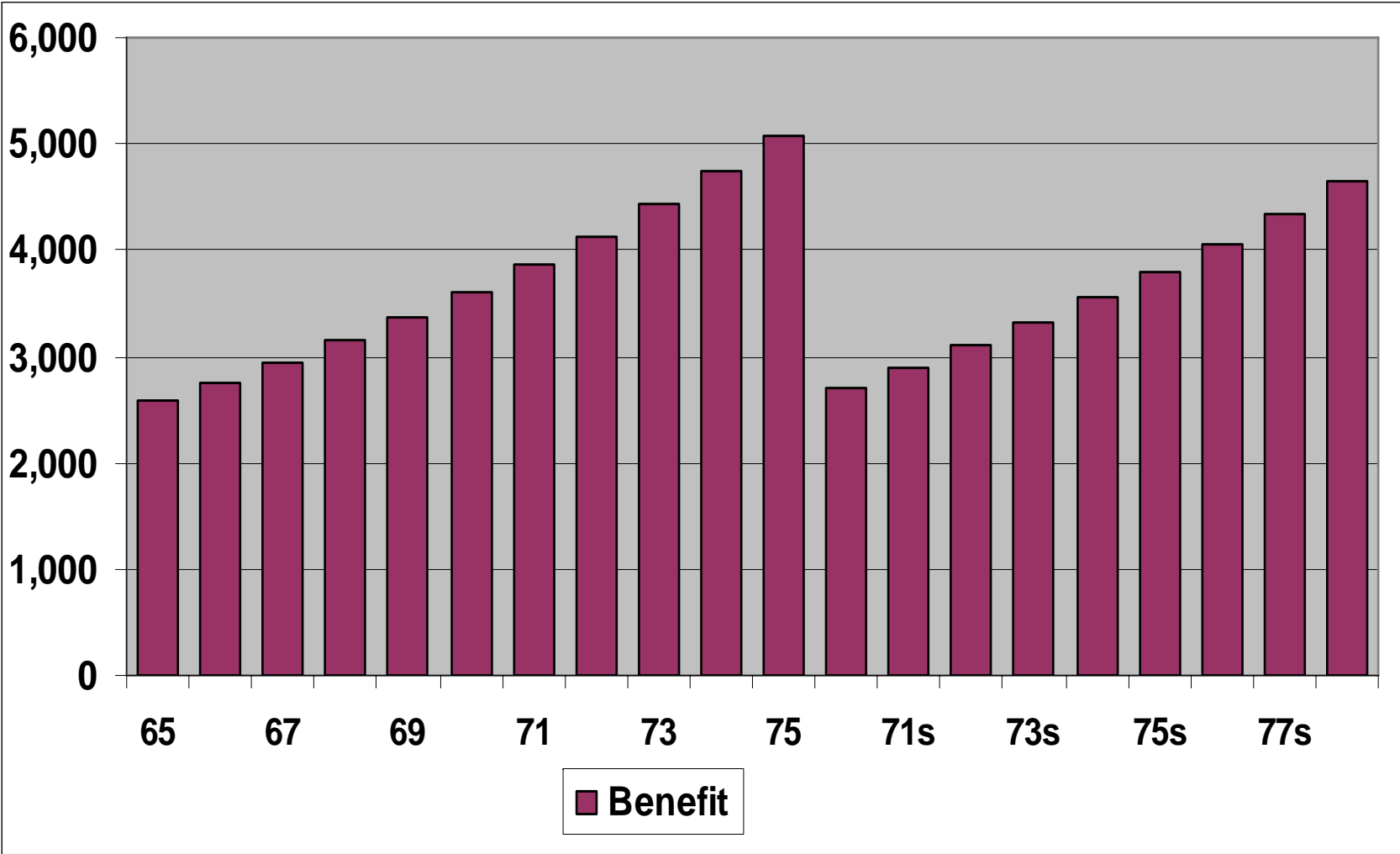
Model: Simulates health care cost after retirement for one individual member of the Fund.

**Accumulated Fund = Previous Year Fund
+ Contribution Income
+ Investment Income/Loss
- Expenses
- Benefit**

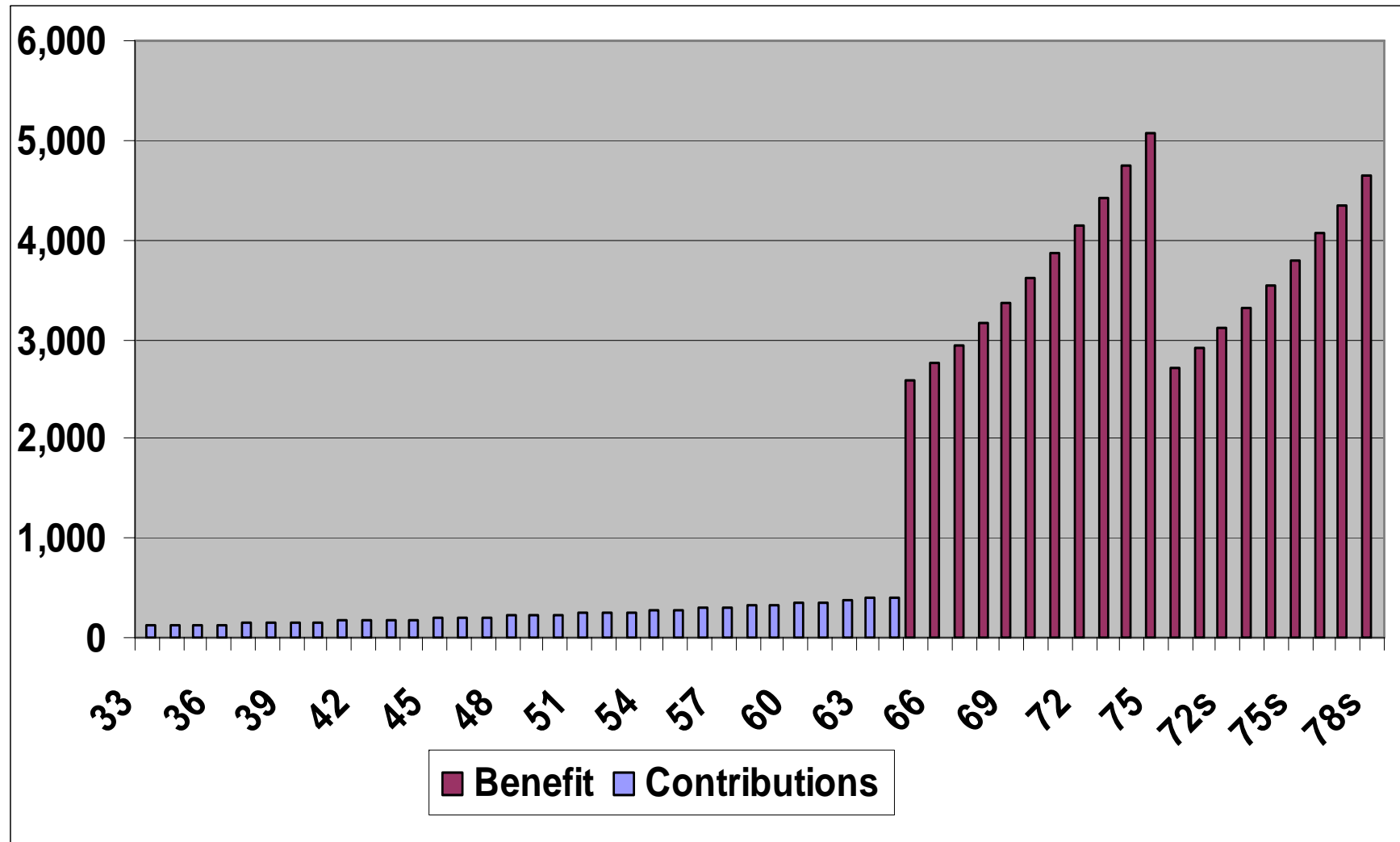
Assumptions used in the model	
Sex	Male
Entry Age	33
Retirement Age	65
Life expectancy males	75
Life expectancy females	78
Age difference husband-wife	6
Salary Increases	4.00%
Initial monthly salary	\$1000
Average medical cost TODAY for retiree and spouse	\$1000
Investment Return	5.00%
Administration Expenses	10.00%
Ageing cost inflation	4%
Medical cost inflation	3%
Total cost inflation	7%

- Starting with the average annual health care cost of covering both the retiree and his wife when the retiree is aged 65 and his wife is 6 years younger.
- According to the life expectancy of both the retiree and his wife, the benefits will be paid for 19 years i.e. from age 65 to age 78 s (the age of the spouse since after age 75, the spouse will be the only beneficiary).
- The last cost at age 78 s will be 4,656.

WHO WILL PAY FOR THESE BENEFITS?



A 1% Contribution rate

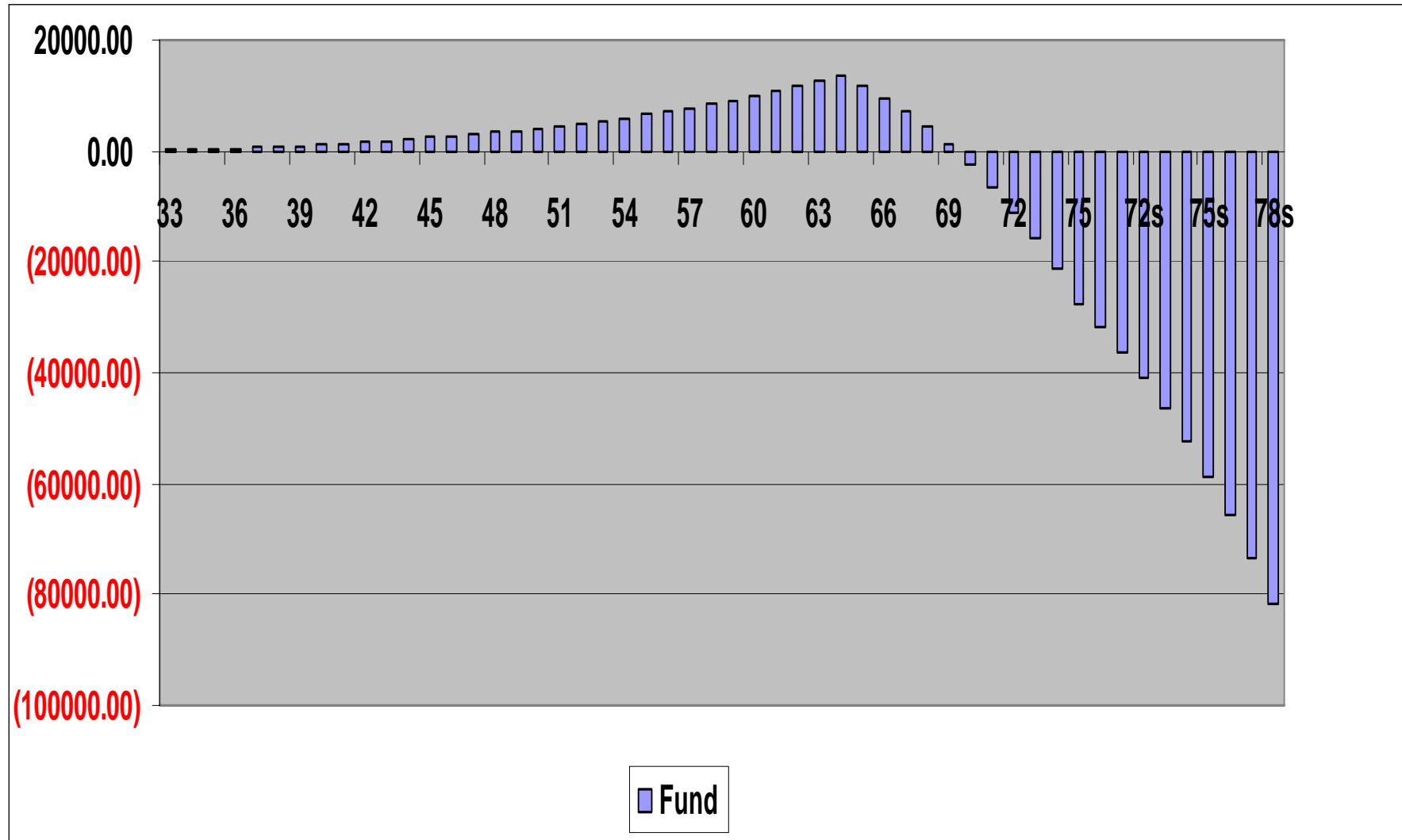


At the age of 65:

- Future Value of all Contribution is \$15,837 per member
- Present value of the future benefits \$46,579 per member.

SYSTEM UNSUSTAINABLE

A 1% Contribution rate



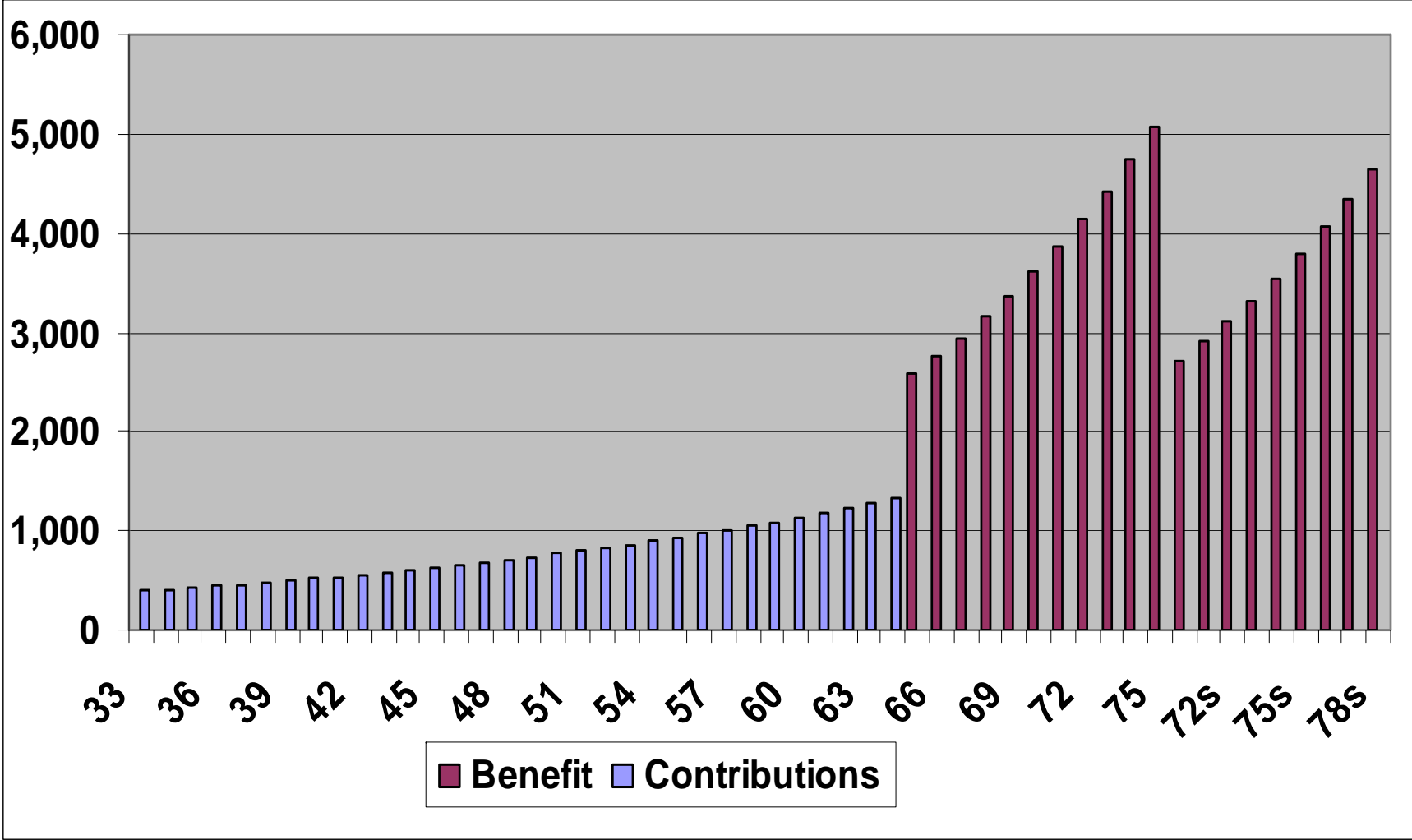
- The cost is unsustainable.
- The individual Fund becomes negative long before the end of the period.

=>

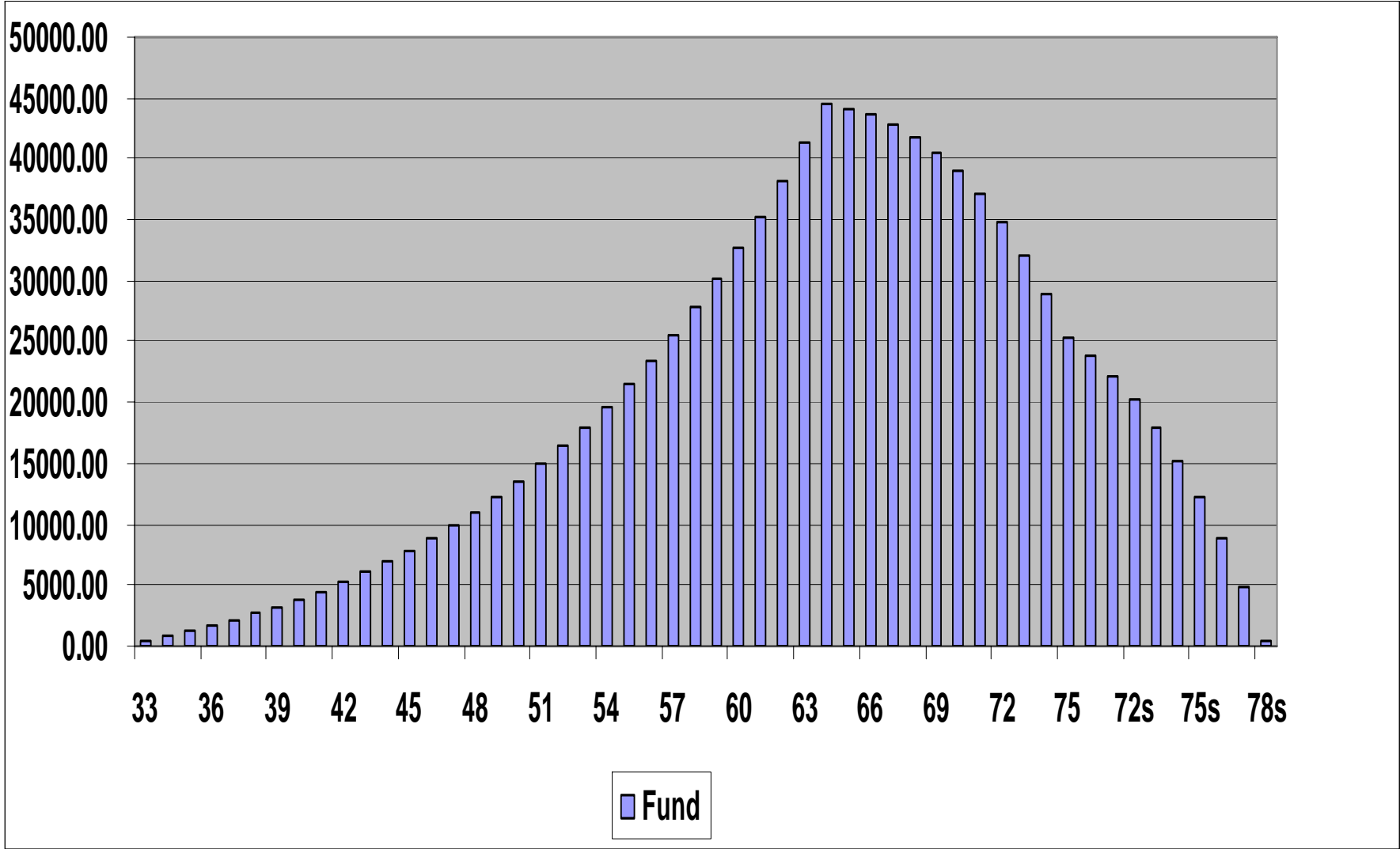
What is the contribution rate required to keep the Fund positive till the end of the period?

- This contribution rate would need to be revised on a regular basis to reflect any changes in life expectancy and medical cost inflation.

Required Contribution rate is 3.28%



Required Contribution rate is 3.28%

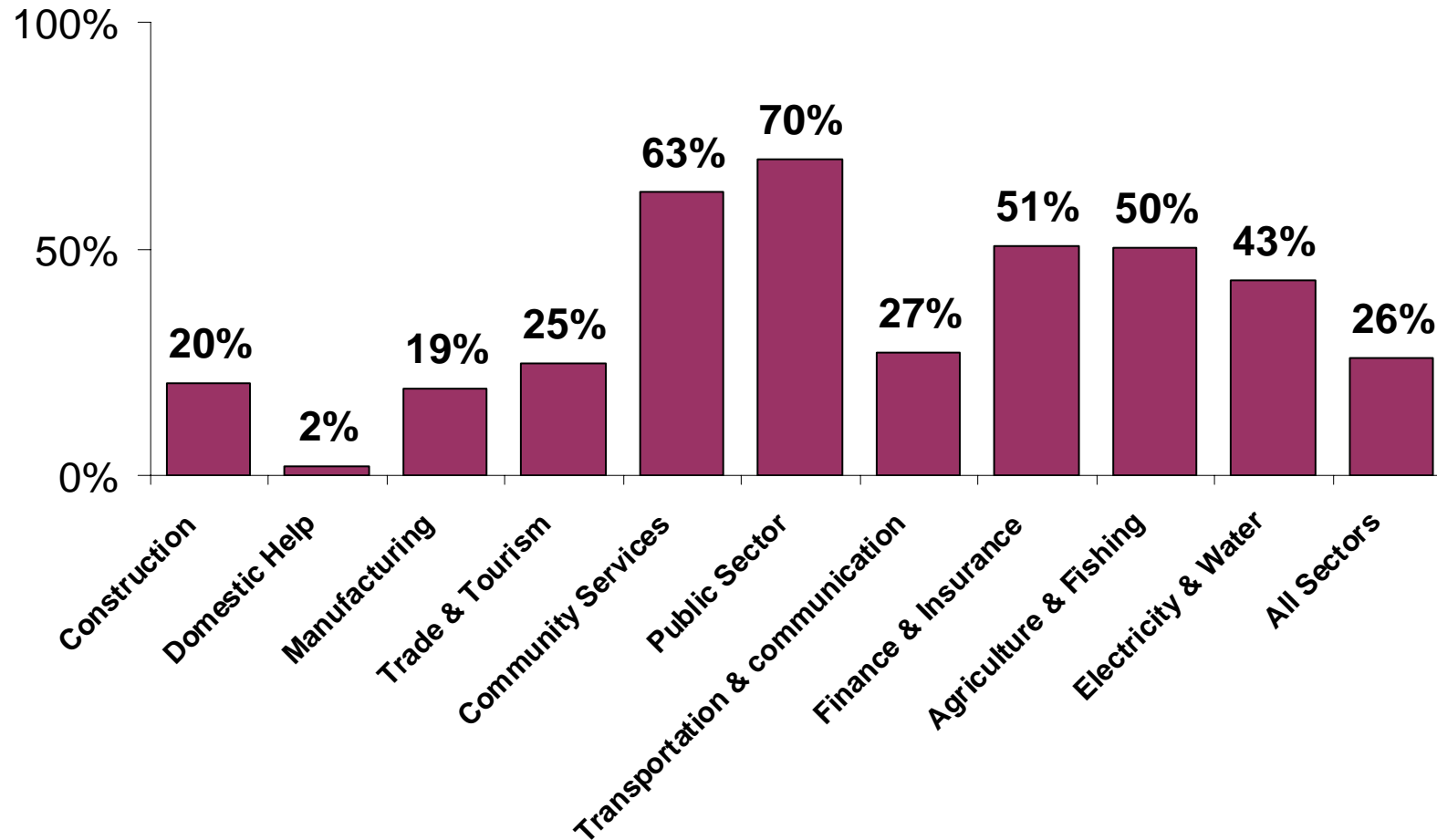


Capping the salaries

- Should long-term health care be financed through solidarity between income groups or should it be specified according to salary brackets?
- contribution rate is a percentage on total salaries. May be unfair to high-paid members as they will be in effect paying very high contributions.
- Can be overcome by capping salaries or expressing the cost per capita, either fixed or increasing per year in line with an index.
- But this would further increase the contribution rate required to fund for the benefits.

Financial Implications

Labour Costs Share of Total Costs Expenditure by Sector



Issues

- Payment System (Tax, Levi, or ...)
- Vestment Rights
- Mobility
- Benefit Levels (Multi pillar, or basic only)
- The Existing Insured Population
- Employers With Health Facilities
- Administration of the System
- Investment of Funds
- Regulating Insurers

Contact:

Tel: +961 1 752 999

Fax: +961 1 751 292

Email: ibrahim@muhanna.com

Web: www.muhanna.com

Other interesting sites:

www.muhanna.org

www.muhanna.biz