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HEALTH INSURANCE

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An iceberg floating in the ocean. The tip of the iceberg is visible above the water, while the much larger part is submerged below the surface. The sky is blue with some clouds, and the water is a deep blue.

Vision, Goals, Strategies, Plans, Systems

Financial Uncertainty

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

"What is an Actuary"

"من هو الخبير الاكتواري؟"

"Actuaries are multi-skilled strategic thinkers, trained in the theory and application of mathematics, statistics, economics, probability and finance. They have been called financial architects and **social mathematicians**, because their unique combination of analytical and business skills are used to address a growing variety of **financial and social** challenges worldwide."

ان الاكتواري هو مفكر استراتيجي متعدد المهارات، مدرب في نظرية و تطبيق علوم الرياضيات والاحصاء و الاقتصاد والاحتمال و المال. لقد اطلقت عليهم تسمية مهندسي المال و **رياضي المجتمع** لان مزجهم الفريد لمهارات الاعمال و التحليل تخولهم التطرق الى عدد متزايد من التحديات **المالية** و **الاجتماعية** المختلفة على المستوى العالمي.

HEALTH CARE THE FIVE PLAYERS

- Recipient of Service
- Provider of Service
- Settler of Cost
- Scheme Administrator
- Regulator

HEALTH CARE THE FIVE PLAYERS

Recipient of Service

- Active Population
 - Formal Sector
 - Informal Sector
- Retired Population
- Unprivileged
- Disabled

HEALTH CARE THE FIVE PLAYERS

Provider of Service

- Professional Body
- Health Institution
 - Public
 - Private
- Others

HEALTH CARE THE FIVE PLAYERS

Settler of Cost

- Individual
- Employer
- Insurance Company
- Health Provider (HMO)
- Government

HEALTH CARE THE FIVE PLAYERS

Scheme Administrator

- Independent Health Fund
- Insurance Companies
- Third Party Administrator

HEALTH CARE THE FIVE PLAYERS

Regulator

- Ministry of Health
- Insurance Supervisor
- Consumer Protection Board

HEALTH CARE

THE FOUR COST COMPONENTS

- Procedure Cost
- Utilization Rate
- Settlement Cost
- *Universality of Cover*
 - *Population Exposed to Risk*
 - *Extent of Benefits*

Health Care Systems Characteristics

STRENGTH

- Equitable distribution of health outcomes
- Financial fairness
- Low cost

WEAKNESSES

- Inadequate responsiveness Public or Private
- Uneven distribution of health care
- Financial unfairness

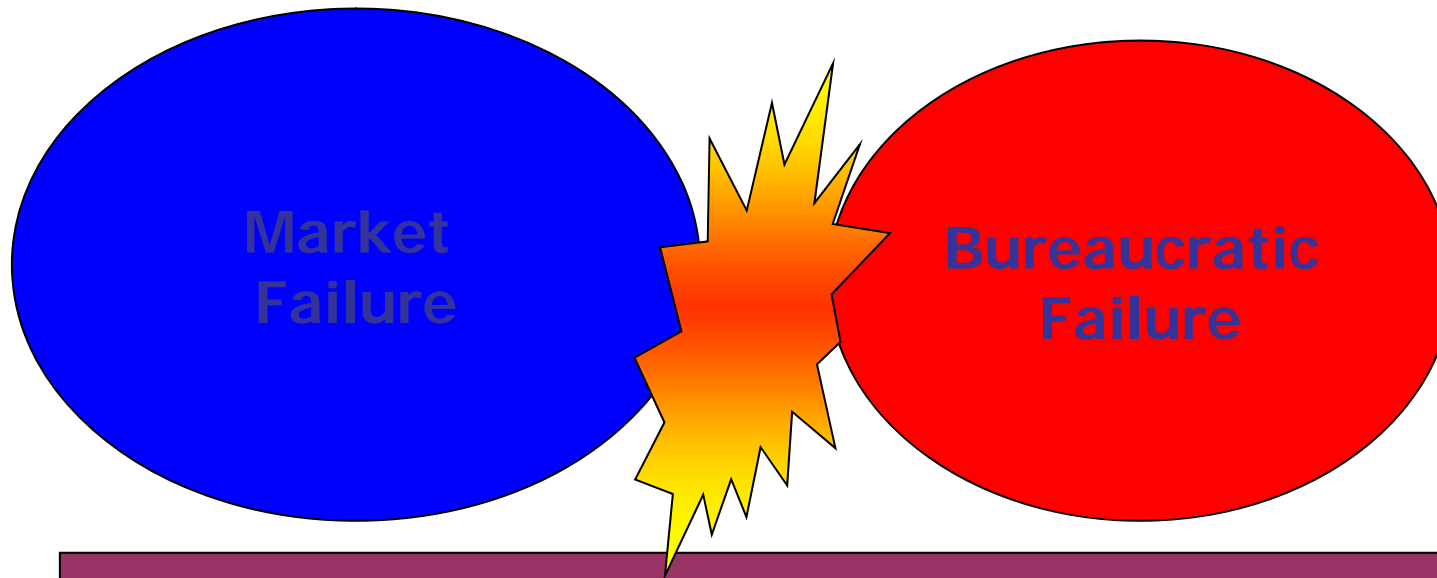
Public System

- A lack of **choice** eliminates uncertainty about the level of risk borne by public risk bearer
- Buyers' pursuit of individual equity is largely eliminated from marketplace behavior
- Political, bureaucratic and provider-oriented issues often supplant focus on population "needs" and "wants"

Private System

- **Choice** causes uncertainty about the level of risk borne by the risk carrier
- **Insurance** causes consumers to increase demand for covered goods and services (moral hazard)
- **Competition** among insurers to satisfy buyers' "needs" and "wants"
- **Market failure** incomplete insurance, adverse selection and moral hazard naturally arise to lesser or greater extent

The Challenge: Finding the Right Balance, Common Goals



**Public-Private Partnership in Health:
Finding Common Goals
ACTUARIES HAVE BIG ROLE TO PLAY**

Towards an Optimum Health Care System

- Recognize and satisfy population “needs” and “wants”
- Create incentives for efficiency and improve effectiveness of public health care resources
- Design, implement and manage:
 - a rational, interface between public “core” and private “non-core” programs
 - public oversight of private “non-core” health insurance programs
 - effective public health interventions
- Rationalize public vs. private resource and medical decision making

Towards an Optimum Health Care System

- Public Sector must provide care for the:
 - Elderly
 - Unprivileged
 - Disabled
 - Preventive care to all
 - Core health care (compulsory basis) may/may not
- Private Sector may provide:
 - Core health care (compulsory basis) may/may not
 - Non core health care (voluntary basis)

THE FUTURE OF HEALTH CARE FINANCING COULD BE FRIGHTENING

The Financial Crisis and Global Health

Report of a High-Level Consultation
World Health Organization (WHO)
Geneva -19 January 2009

All countries will be affected, but some
will be affected more than others

WHO recommendations:

- (a) to build awareness of the ways in which an economic downturn may affect health spending, health services, health-seeking behaviour and health outcomes;
- (b) to make the case for sustaining investments in health; and
- (c) to identify actions – including monitoring of early warning signs – that can help to mitigate the negative impact of economic downturns.

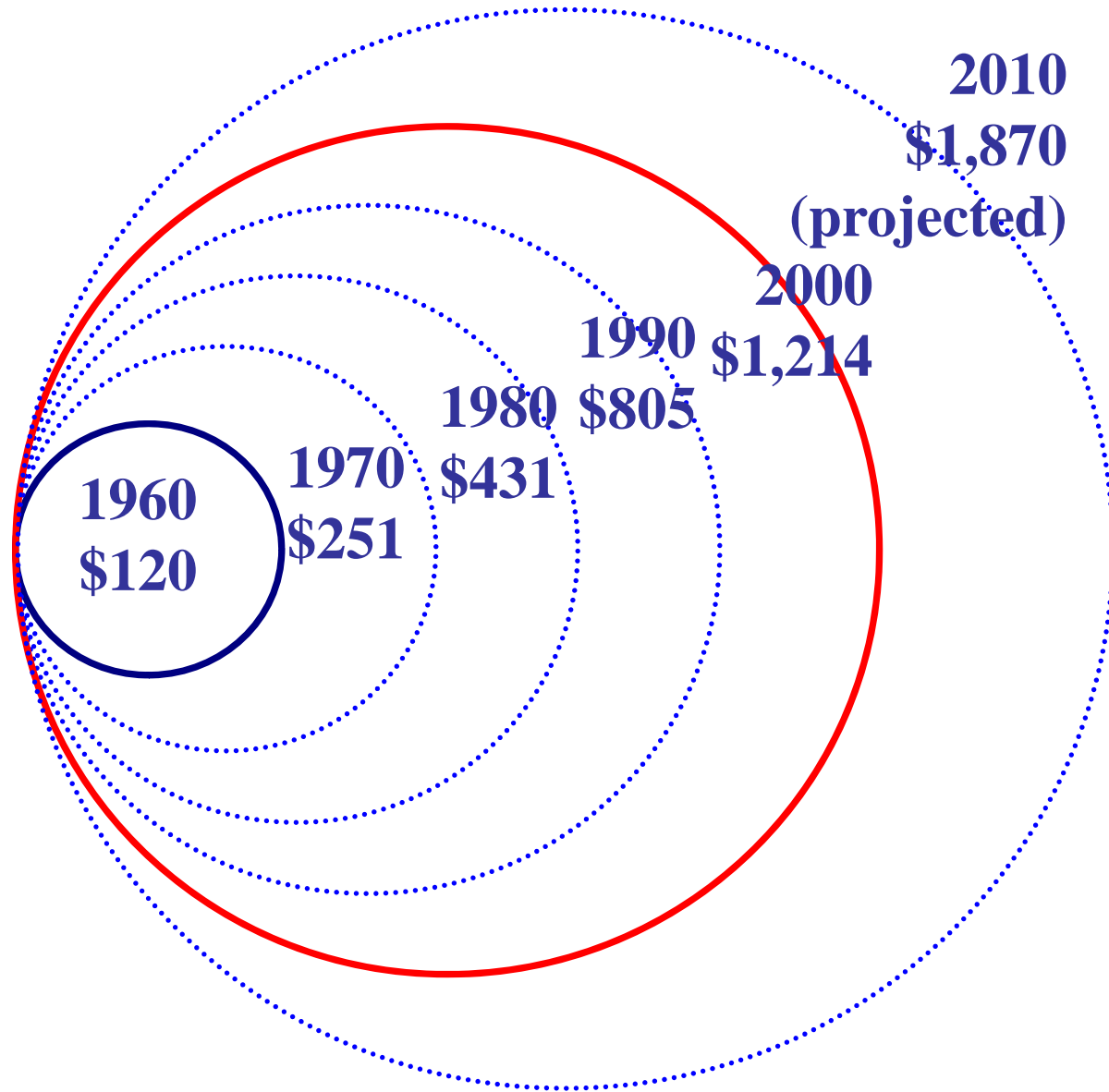
Federal Stimulus Bill Clarifies Regulation Of Health Care Industry

When the Senate passed their version of the bill on February 9th 2009, it promised \$838 Billion dollars for spending projects designed to jump start the economy.

But like most things in government there is a lot more in the details than the headlines.

US Healthcare Expenditure

Based on 1996
In Billion of US\$



The US Government

- Healthcare Implicit Debt
 - \$65 Trillion in 2006
 - \$51 Trillion – based on high discount rate
 - \$86 Trillion – based on low discount rate
 - \$68 Trillion in 2007
 - \$70 Trillion in 2008
 - \$72 Trillion in 2009 expected

Components of cost

- Average cost of procedure – age sensitive
- Utilization rate age sensitive
- Medical Inflation – is age sensitive too

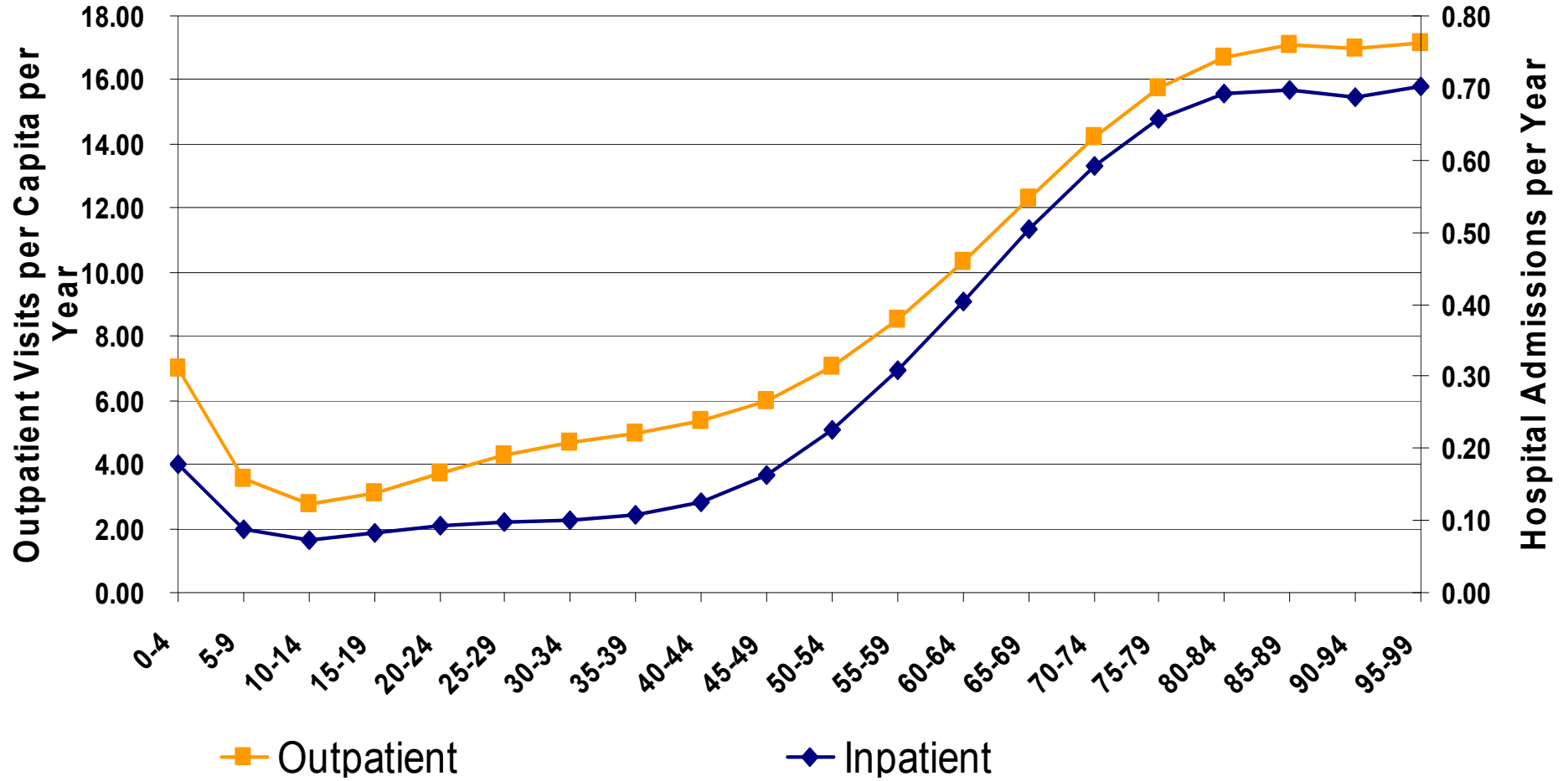
Anti-selection Exposure

- 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.

Utilisation by Age Groups



Healthcare Cost indexed at age 45

AGES up to	Average Cost	Utilization Rate	Burning Cost	Medical Inflation
15	52	15%	8	3%
25	67	8%	5	2%
35	109	10%	11	1%
45	100	13%	13	0%
55	127	15%	19	1%
65	169	23%	39	2%
75	215	26%	56	3%
85	270	29%	78	4%

THE FUTURE OF HEALTH CARE
FINANCING FOR THE ELDERLY
COULD BE MORE
FRIGHTENING

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

Implication of Aging Population

- Increased life expectancy means a growing number of people living beyond retirement age.
- The increase in cost of health care for those in the third age bracket is larger than the average increase in wage of the workforce.
- Moreover, the dependency ratio is reducing.
- Thus tax funds to support the elderly will reduce.
- Governments must find alternative means of meeting benefit obligations

Case Study

**Individual example in the context of
the National Health System**

**A Fund that provides health care
benefits for the retiree and
dependent spouse**

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

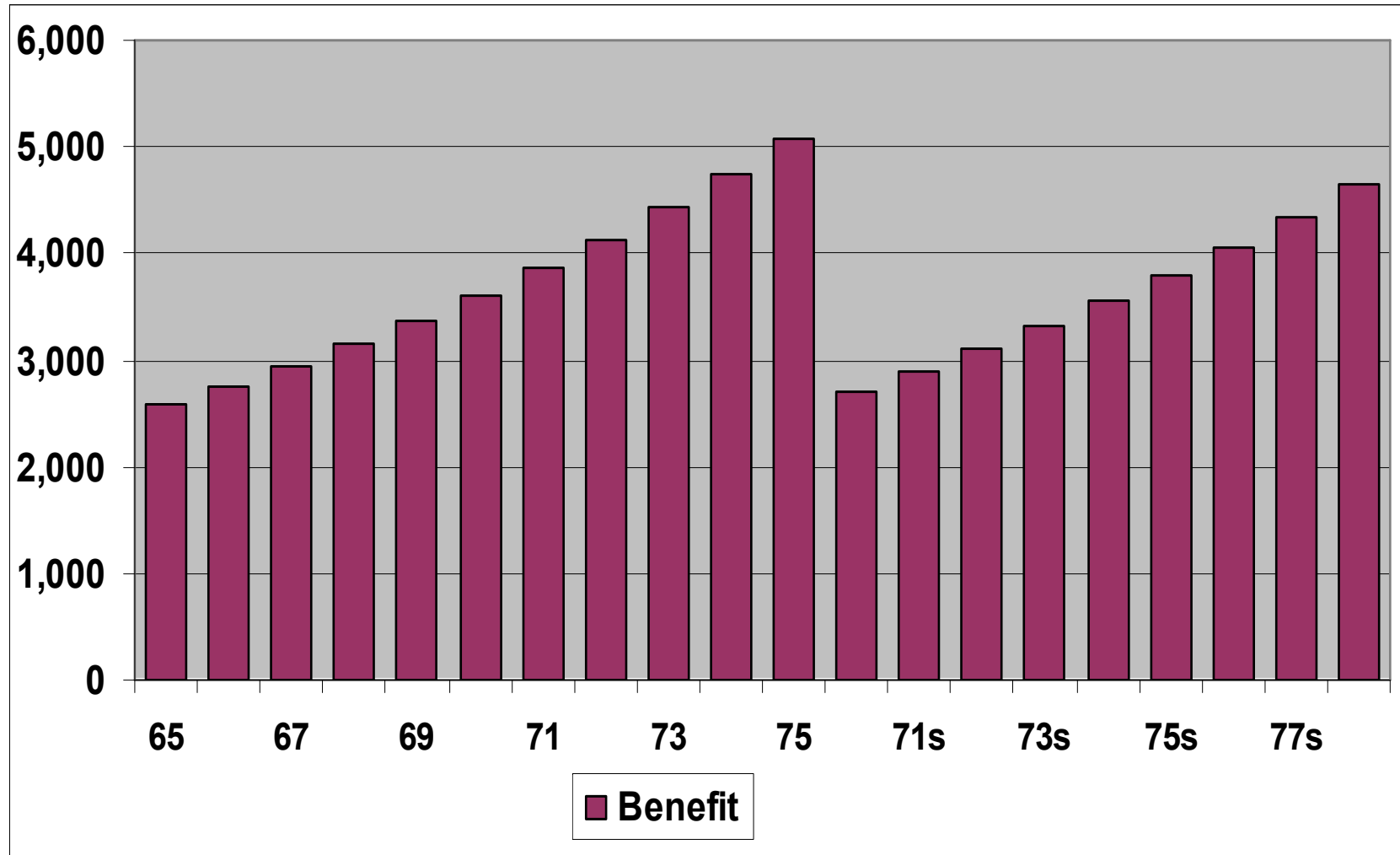
**Accumulated Fund = Previous Year Fund
+ Contribution Income
+ Investment Income/Loss
- Expenses
- Benefit**

Assumptions used in the model

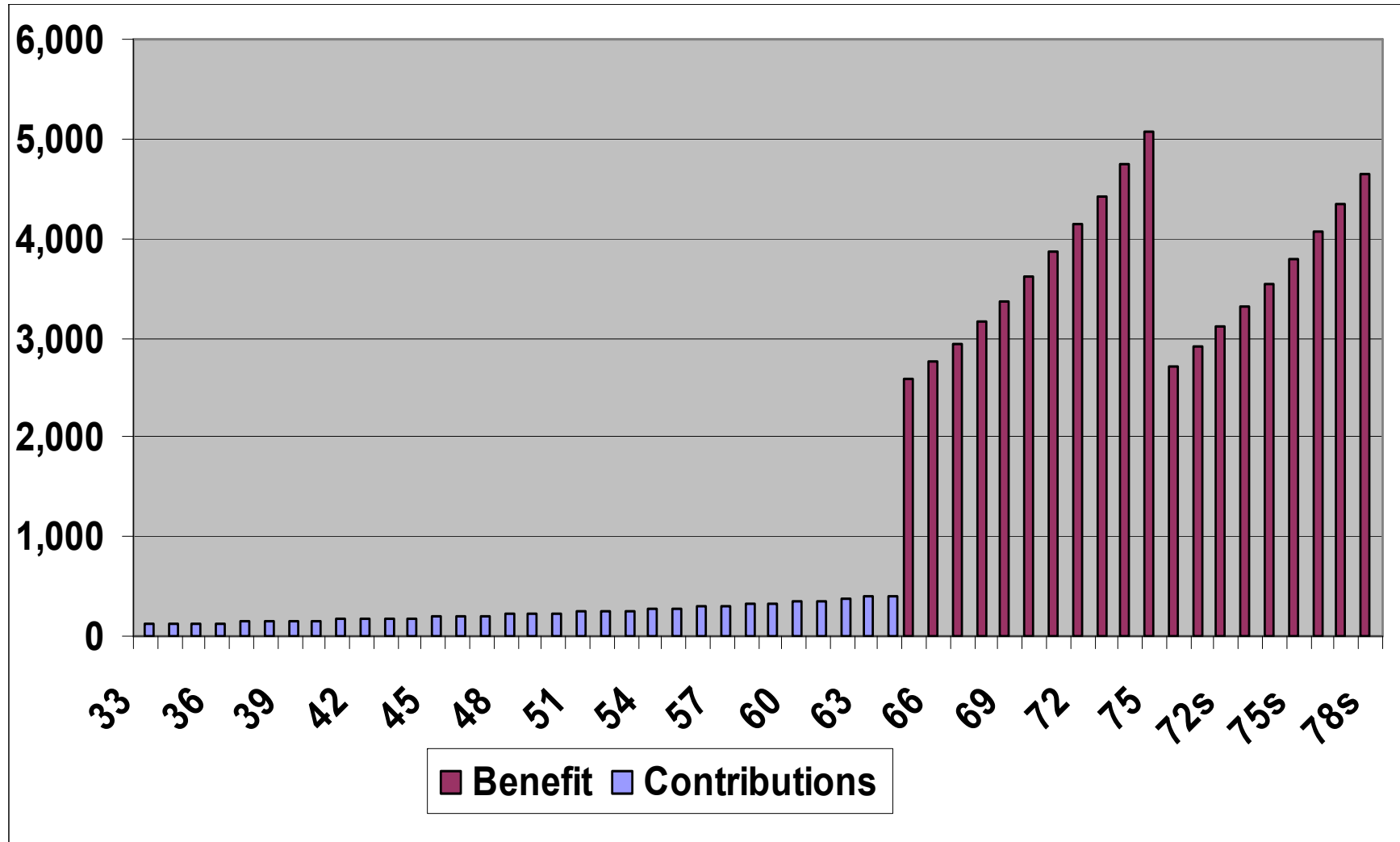
Sex	Male
Entry Age	33
Retirement Age	65
Life expectancy males	75
Life expectancy females	78
Age difference husband-wife	6
Salary Increases	4.00%
Initial monthly salary	\$1000
Average medical cost TODAY for retiree and spouse	\$1000
Investment Return	5.00%
Administration Expenses	10.00%
Ageing cost inflation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

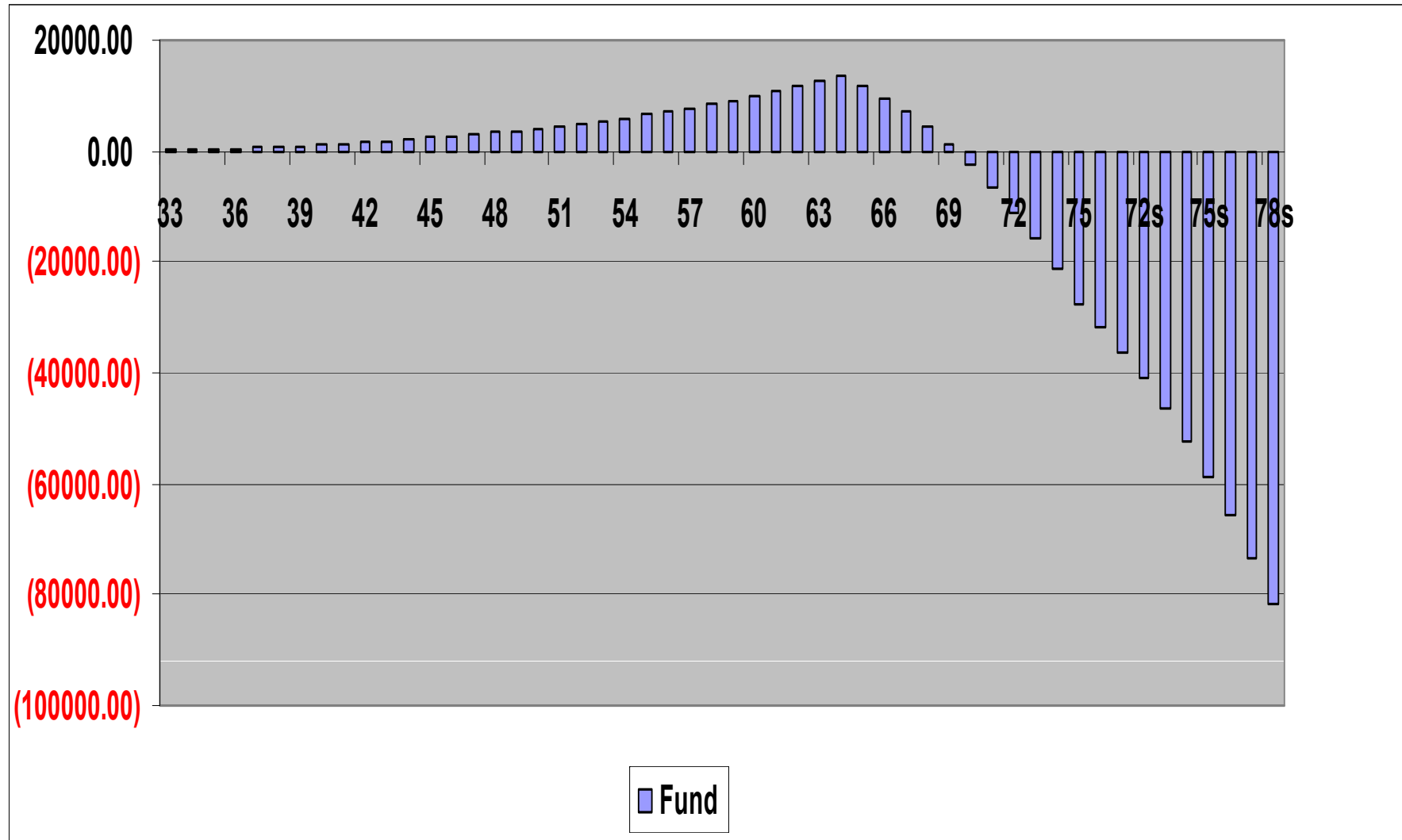


At the age of 65:

- 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



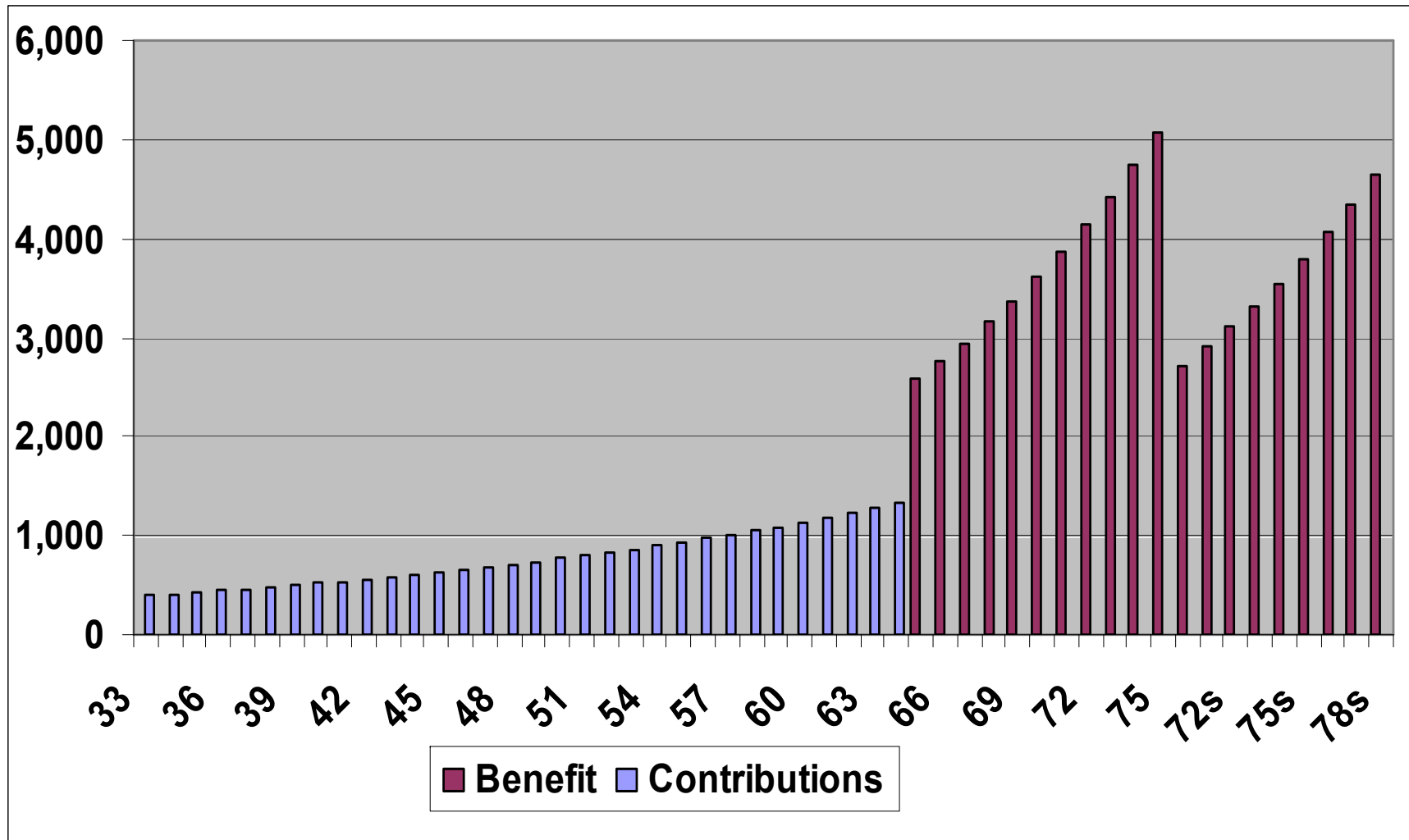
- The cost is unsustainable.
- The individual Fund becomes negative long before the end of the period.

=>

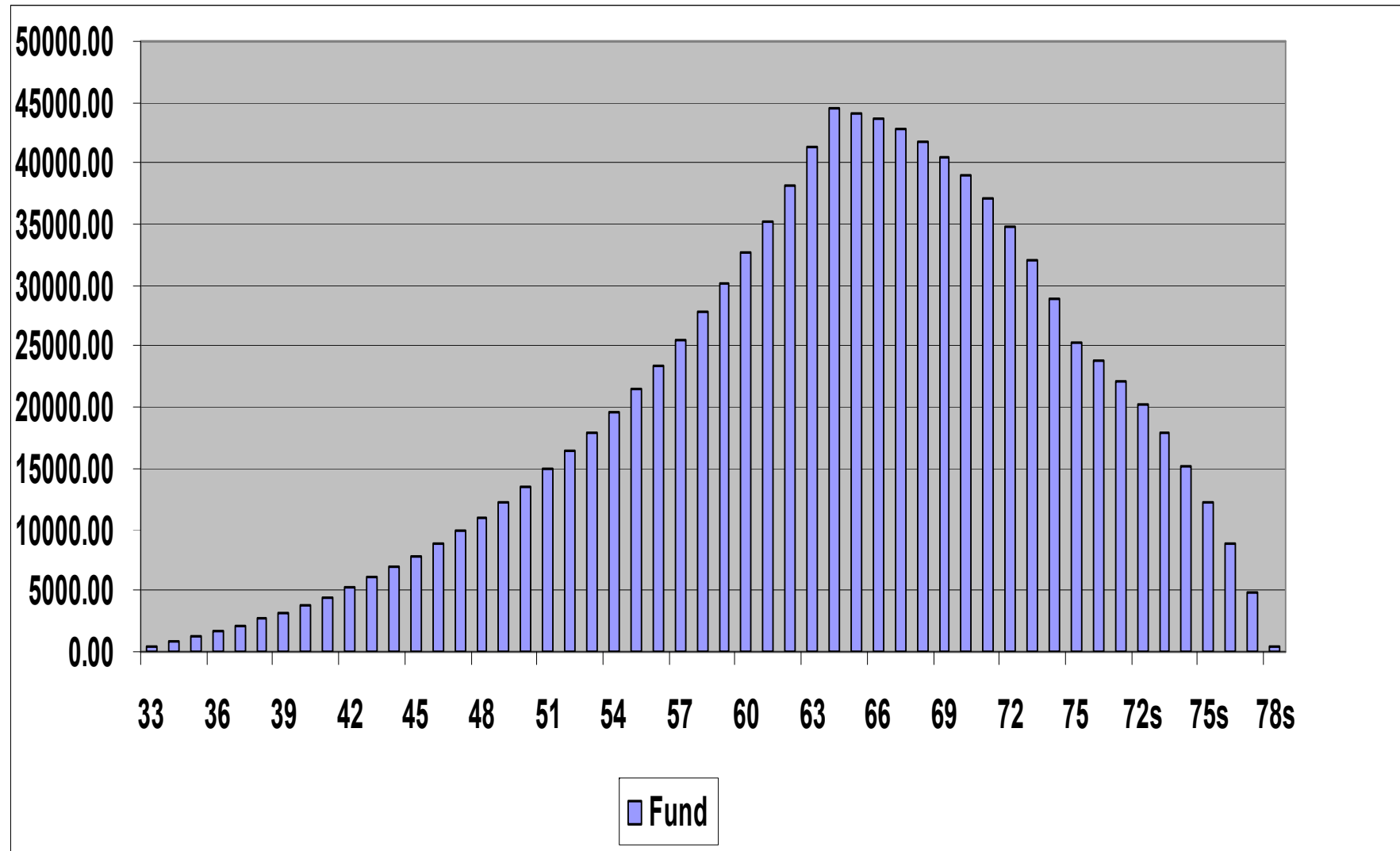
What is the contribution rate required to keep the Fund positive till the end of the period?

- 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.

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

Issues

1. Financing: pay-as-you-go vs. pre funding
2. Extent of Universality
3. Level of Coverage
4. Limitations, Exclusions & Provision
5. Deductibles & co-pay
6. Exposed to Risk Population:
 - (Actives, Retirees, Disadvantaged, Uninsurable)
7. Medical Inflation
8. Regulatory issues

Actuaries in Health Care

- Actuaries are trained in understanding and modeling system's responses to varying incentives, policy and administrative options and communicating costs and consequences to relevant audiences
- Actuaries are trained in gathering data and using it to refine health care systems
- Actuaries are trained in how to price benefit and policy options
- Actuaries are trained in techniques needed to scientifically validate health care treatment options
- Actuaries understand the difference in pricing needs vs. wants

Conclusions

- Think Socially
- Think Globally
- Think Long Term

- Ask an Actuary

Q & A

Overview: On i.e. Muhanna & co.

- The 1st and largest Actuarial Consulting Firm in the Region & the 4th largest Firm in the World in Social Insurance.
- The only Insurance Rating Services in the Region.
- The only Actuarial Education Foundation in the Region.

- أول و أكبر شركة خدمات استشارية أكتوارية في العالم العربي. رابع أكبر شركة في العالم في الضمان الاجتماعي
- الخدمات الوحيدة في المنطقة المتعلقة بتصنيف شركات التأمين
- المؤسسة الأكتوارية التعليمية الوحيدة في المنطقة

To date i.e. Muhanna Group has :

- Rendered services in **38** countries
- Provided services to **52** government & semi-government organizations
- Reviewed **18** Social Insurance Funds & Reviewed **97** Pension & Provident Funds
- Advised **63** life & general Insurance companies Provide services to **94** other private institutions
- Financed & sponsored **37** actuarial students
- Delivered & published **69** actuarial and insurance papers & studies

- قدمت خدمات في 38 دولة
- قدمت خدمات لـ 52 مؤسسة حكومية و شبه حكومية
- كلفت بمراجعة 18 صندوق ضمان اجتماعي
- قدمت استشارتها لـ 63 شركة تأمين على الحياة و تأمين عام و 94 مؤسسة خاصة اخرى
- مولت و تكفلت 37 طالب اکتواري
- نشرت 69 بحثا و دراسة في مجال التأمين و العلم الاکتواري

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