

Current pension environment | UK development of EA market | HR underwriting approach

UK Success Factors

- ▶ Substantial saving accumulations upon retirement
 - Individual savings
 - Defined contributions
- ▶ Tax rules lead to annuitization
- ▶ IFA dominated market requires immediate guaranteed quotes
- ▶ In today's investment environment lifetime annuities are an attractive alternative

Is the market environment allowing for EA in other countries?

10 | Enhanced Annuities hannover re[®]

Current pension environment | UK development of EA market | HR underwriting approach

Perspective other countries

- ▶ USA: aggressive mortality assumptions and long term guarantees make Enhanced Annuity proposition unattractive
- ▶ South Africa: Enhanced Annuities in competition with attractive alternative product
- ▶ Spain: Pure investment products without longevity component sold
- ▶ Singapore: Opt out option within standard annuity product offers Enhanced Annuity potential

Market education and government rules needed

10 | Enhanced Annuities hannover re[®]

Challenges for and Levers to Ensuring Sustainability of the 2nd Pillar

Bruno Pfister

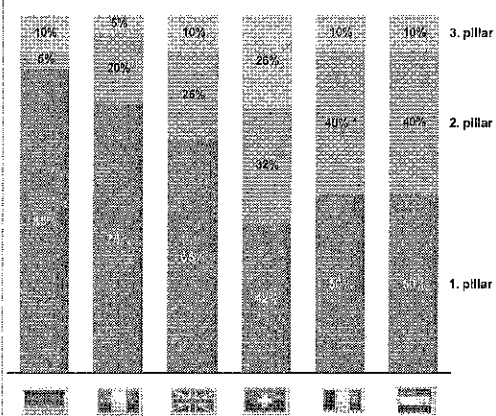
International comparison



Melbourne Mercer Global Pension Index

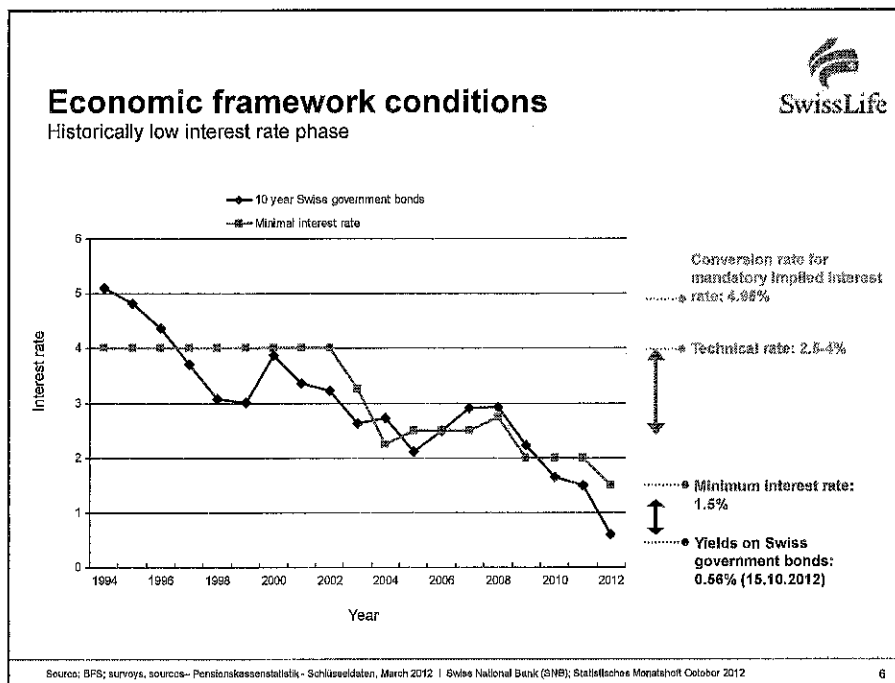
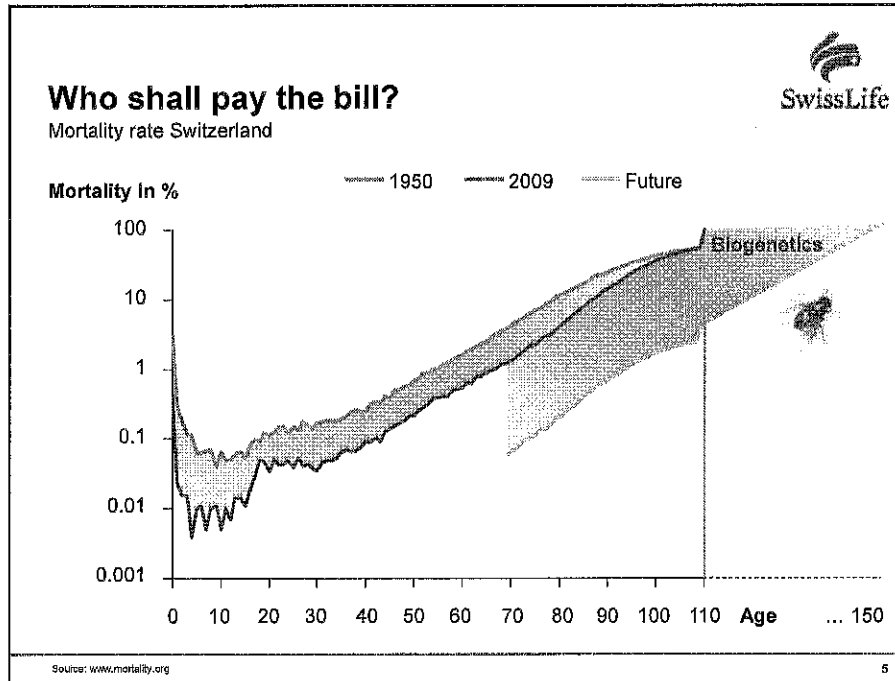
Country	Index value
Netherlands	78.3
Switzerland	75.3
Sweden	74.5
Australia	72.9
Canada	69.9
England	63.7
Chile	59.9
Brazil	59.8
Singapore	59.6
USA	57.3
France	54.6
Germany	54.0
Japan	42.9
China	40.3

Breakdown of average retirement income

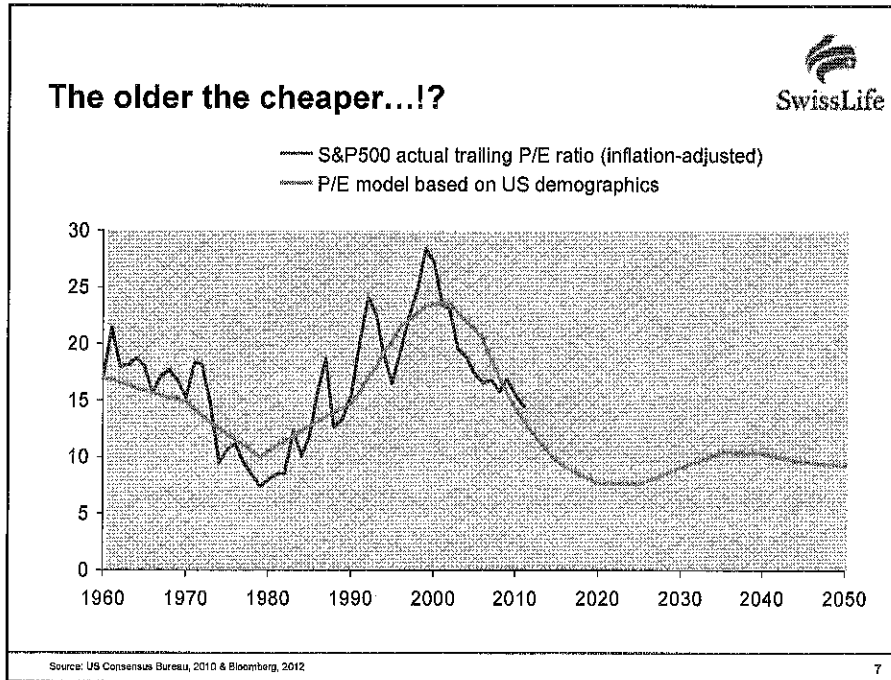


Source: Melbourne Mercer Global Pension Index (2010), Deutsches Institut für Altersvorsorge, CSFB, CEA; www.liferevorsorge.de, AHV; Forschungszentrum Generationenverträge (2007)
 * 2nd pillar in France is mainly financed as a pay-as-you-go system.

150



52



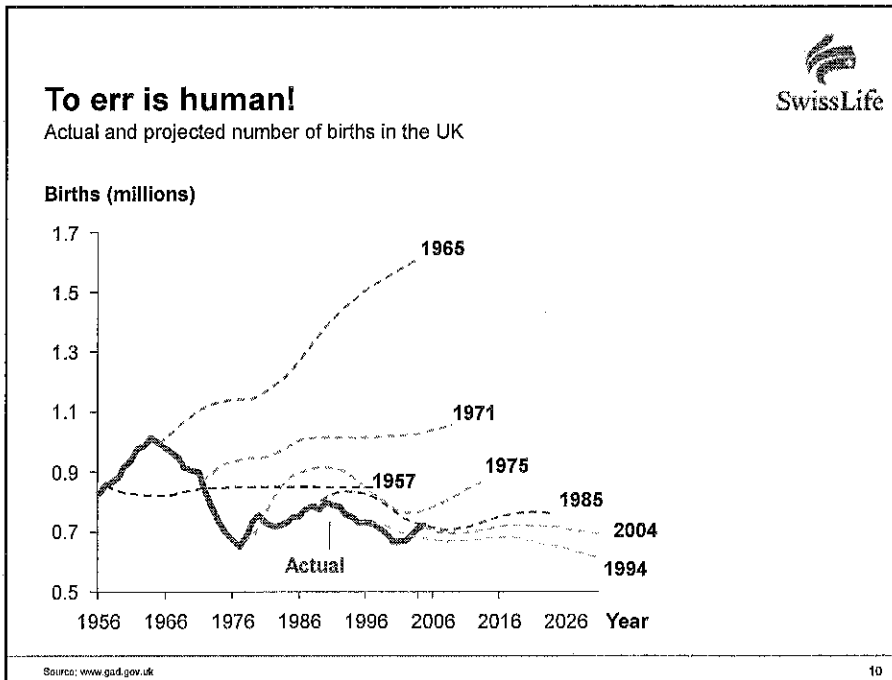
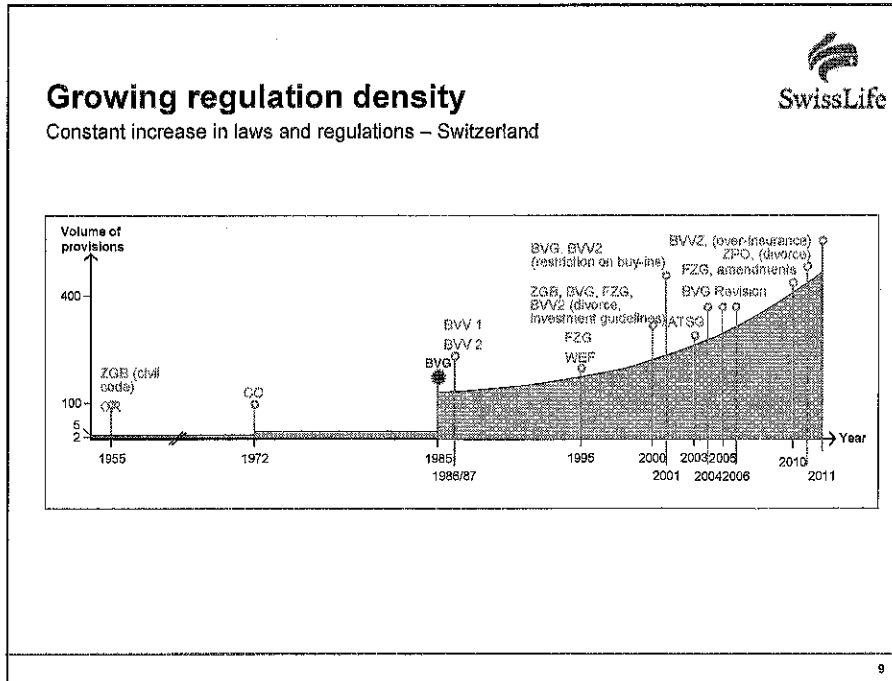
Levers to restore the second pillar

	AHV according to the Federal Social Insurance Office ¹	Occupational pension provision according to BVG ²	AXA study ³
Increase contributions	by 10% - 30%	by 20% - 40%	50% agree
Increase number of contribution years	2 to 4.4 years for a retirement age between 67 and 70	5 to 10 years for a retirement age between 69 and 71	Increase retirement age: 1/3 agree Pay contributions before 25: 2/3 agree
Reduce benefits	by 19% - 26%	by 20% - 30% by lowering the conversion rate to 5.5% - 4.9%	20% agree

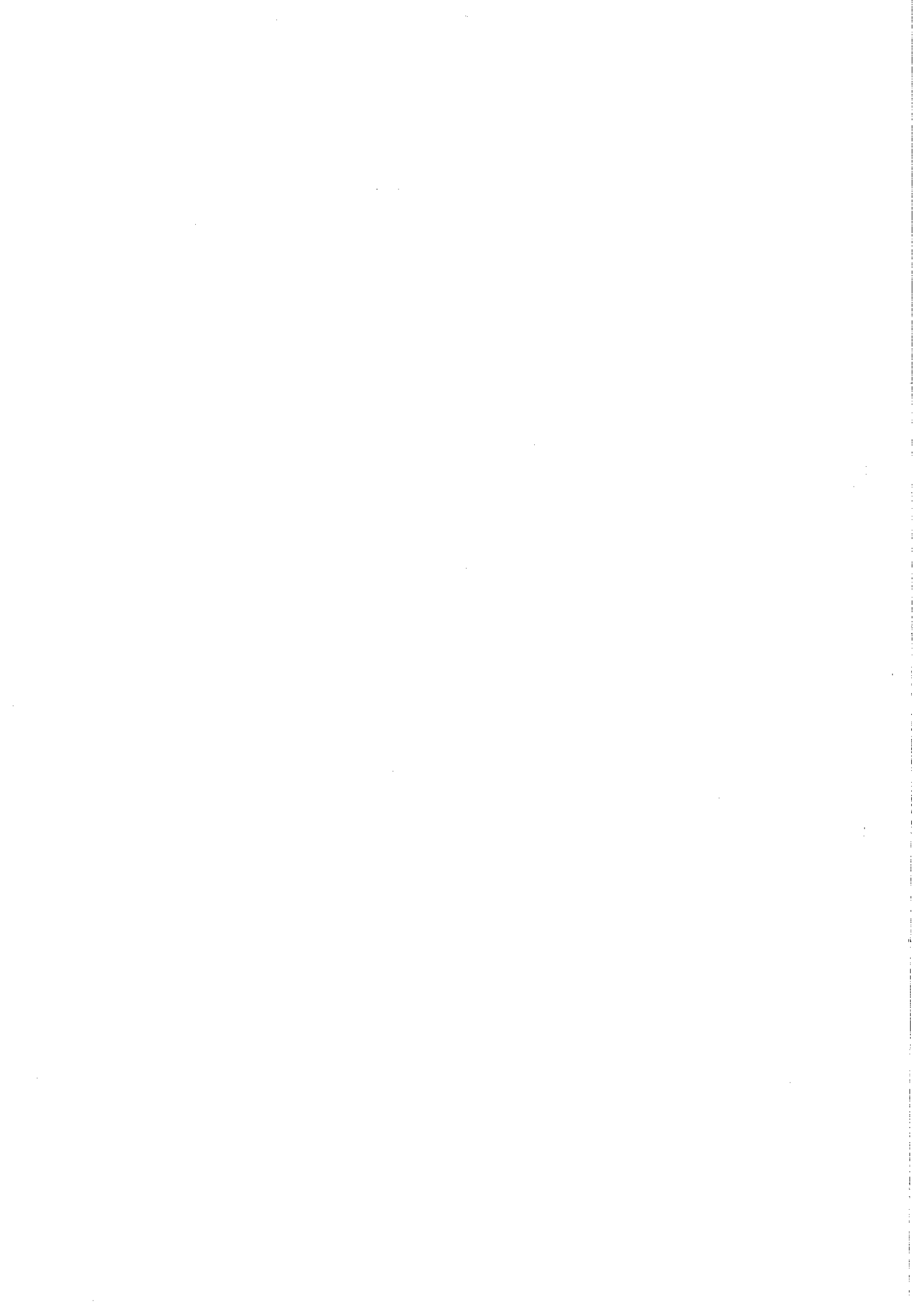
These levers are not to be considered in isolation.
The levers are to be modified and treated as an integrated package.

¹ Source: BSV (Federal Social Insurance Office)
² Federal Social Insurance Office parameters for occupational pension provision extrapolated to BVG lead to a lowering of the technical rate to 2%-3% with similar results to the first pillar
³ AXA Investment Management research line study Swiss population "Danktopf, Vorsorgeparagraf, Altersvorsorge, Schweizer Gesundheitsversicherung" (Knowledge of and attitudes to pension funds among the Swiss), 2012

8



54



The Role of Price Signals from the Insurance Industry for the Four Pillars

Krzysztof Ostaszewski



San Ber'dino

- * As reported by *Chicago Tribune* on August 30, 2012:
 - San Bernardino, a city of about 210,000 near Los Angeles filed for bankruptcy on July 31, 2012.
 - It listed the California Public Employees' Retirement System (Calpers) as its largest creditor, with unfunded pension obligations totaling \$143.3 million.
 - But Calpers, in response to an inquiry from Reuters, estimated the debt at \$319.5 million.
 - Calpers official said that San Bernardino had used an *actuarial value* in determining its unfunded pension obligation, while Calpers used *market value*.

155



Stockton ...

- * Calpers is the largest pension system in the United States. It serves many California cities and counties, including the city of Stockton, which is in bankruptcy.
- * Calpers has long argued that pension claims take priority over bond debt, even *pension obligation bonds*.
- * Stockton issued \$125 million in pension obligation bonds in 2007, which declined in market value by a third in 2008. But Stockton must pay annual interest about \$6 million, 75% of the city's deficit in 2012.
- * In June 2012, the city filed for bankruptcy, unable to make the payments on these and other bonds.



Vallejo ...

- * Another California city, Vallejo, filed for bankruptcy in 2008, and it emerged from it in 2011. Throughout the bankruptcy it continued making payments to Calpers.
- * Stockton also continued making payments to Calpers in bankruptcy.
- * But San Bernardino has failed to make payments to Calpers in excess of \$1 million, and has been deemed delinquent by Calpers.
- * Payments by Calpers to beneficiaries have been unaffected.



Prichard, Alabama

- * In Prichard, Alabama, in 2009, the city pension plan ran out of funds, and the city stopped paying pensions.
- * The city filed for bankruptcy under Chapter 9 on October 29, 2009. It was its second bankruptcy, the first one occurred in 1999. The judge of the 1999 case ordered the city to replenish the pension fund, the city did not.
- * In 2004, the city hired an actuary to analyze and summarize their employees' pension plan. He told the city the plan would run out of money by the summer of 2009. He was off by a bit, they ran out of money in September 2009.
- * As of April 2011, pensioners have not received their pension checks nor has a budget been passed in eighteen months.



Why pension plans?

- * A pension is a promise of payment of retirement benefits that are a function of salary, typically salary near retirement.
- * This type of retirement system: Specific income level, based on prior salary; is desired by workers and simple to understand.
- * Social security systems, state pensions, and employment based pensions provide that benefit.
- * Pillars 1 and 2 provide what workers want.
- * Who needs the other two Pillars?



Why insurance?

- * The common theme in the way the insurance industry presents itself is: We will protect you.
- * The common complaint about the insurance industry is: The protection is too expensive.
- * One solution is for government to lower prices by fiat, or to run insurance operations itself.
- * But the social role of insurance is not protection from risk. For the society as the whole, insurance encourages risk taking: "Like a bridge over troubled water."
- * When taking risks, one must establish boundaries. Insurance pricing sets those boundaries. Of course, risk management is an important part of the function of insurance, as well.
- * A customer who complains how expensive insurance is has felt the message of the need for boundaries.



Pension benefits

- * Pension benefits are capital assets.
- * You can purchase them within
 - Pillar 1: Priced by legal statutes.
 - Pillar 2: Priced by employers, often with help of actuaries, using long-term amortization of liabilities and even amortizing the value of assets sometimes.
 - Pillar 3: Priced by insurance firms, which buy and sell assets they use for funding at market prices, thus forcing market pricing for benefits.
 - Pillar 4: Priced by current labor markets.
- * When pricing is communicated to workers and the entity providing retirement benefits, it affects their current and future economic decisions.



Pension benefits pricing

- * Pension benefits pricing is, in fact, immensely complex.
- * When promises are made, payments of them are often as far as forty years into the future.
- * Price of the same level of benefits varies depending on current economic conditions.
- * If there is high demand for benefits, price should be high.
- * But it does not have to be if there is high supply of benefits.
- * High supply of benefits with low demand for them may produce very low prices.
- * In the world as we see now, we have very high demand for pension benefits. Do we see policies that promote high supply of benefits?



Does it matter how you fund it?

- * Pillar 1: Pay-as-you-go, commonly referred to as the opposite of "funding". In fact, funded by debt of plan provider. Just as funded as any funded plan.
- * Pillar 2: May be funded by debt of plan sponsor (pay-as-you-go), or funded by securities issued by other entities, but in the second case, the "unfunded" portion is still funded by debt of plan sponsor.
- * Pillar 3: Funded by definition.
- * Pillar 4: Pay as you earn, very sound funding.
- * Modigliani-Miller: In the absence of taxes, bankruptcy costs and agency costs, the method of financing has no affect on the value of a firm.



The agency problem

- * We all start our lives with a large short forward position in capital assets needed to fund our retirement. We need to cover that short.
- * Other than the lucky few, most people cover it with their human capital. Human capital cannot be traded. But its income may purchase assets sufficient to cover the short by the time of retirement.
- * Management of this trade is complex, and is a core function of life insurance companies, who must create appropriate derivative securities with human capital acting as the underlying.
- * For an ordinary person, the agents doing that trade for them, have, literally, their life in their hands.



How much does it cost

- * With interest rates at the 1987 level and mortality at that level, a million dollar could have purchased as much as \$80,000 of lifetime income for a retiree aged 65.
- * With interest rates at the 2012 level and current mortality, \$30,000 worth of income may be hard to purchase now for a 65 years old with a million dollars.
- * Is this economic reality represented in the cost of social security pensions? In employment based pensions? The actuarial models used for funding those amortize costs over time. At least since 1997, GASB, applicable to state and municipalities plans, require market valuation of assets.



Even with amortization leeway

State Universities Retirement System of Illinois, percentage of Annual Required Contributions paid into SURS:

2005	47.0%
2006	27.2%
2007	37.0%
2008	48.8%
2009	51.7%
2010	69.4%
2011	61.3%
2012	69.0%



Why does pricing matter?

- * Lack of funding through an investment portfolio means the pension plan's benefits are subject to credit risk of the plan provider.
- * Large reliance on credit of pension plan provider introduces large agency cost.
- * The cost of the plan itself is opaque to plan participants, and the credit risk of their plan provider is not easy for them to evaluate, and even more difficult to hedge.
- * But they always have two clear reference points:
 - o Annuity pricing by life insurance companies in Third Pillar.
 - o Ability to earn continued income in Fourth Pillar.
- * In absence of the Third and Fourth Pillar there will be inefficiencies in capital formation and use of human capital.



A story of a pension plan

- * Plan covers certain workers in a union.
- * Important and valued group of state/municipal employees.
- * Accounting rules subject to the Governmental Accounting Standards Board (GASB)'s generally accepted accounting principles used by state and local governments in the United States.
- * Not subject to Employee Retirement Income Security Act of 1974 or Pension Protection Act of 2006, which affect private pension plans, and require strict standards of funding.
- * Using projected unit credit actuarial method.



Some More Information

- * Multiple employer defined benefit pension plan, also providing certain survivor and disability benefits.
- * Current total membership is approximately 60,000.
- * Approximately 60 employers participating.
- * Two tier benefits, for employees prior to 2011 and past 2011:
 - o Prior to 2011: A member with at least 20 years of service and who has attained 55 years of age is entitled to a pension. A member with at least 5 but less than 20 years of service is entitled to a pension on attainment of age 62.
 - o Past 2011: A member with at least 10 years of service and who has attained 67 years of age is entitled to an unreduced pension. A member with at least 10 years of service and who has attained 62 years of age is entitled to a reduced pension.
 - o About 2.2% of final average salary for each year of service.



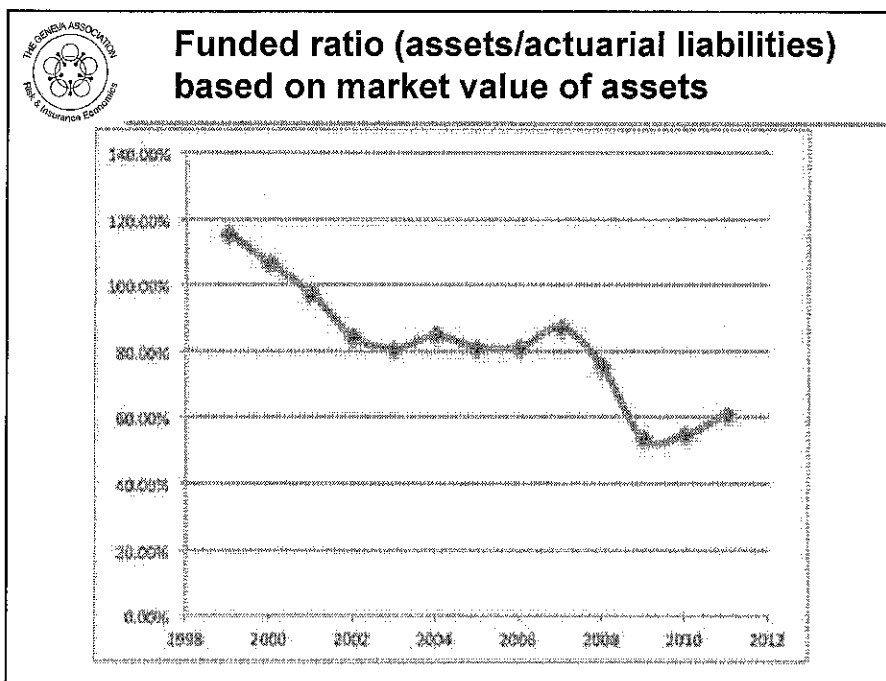
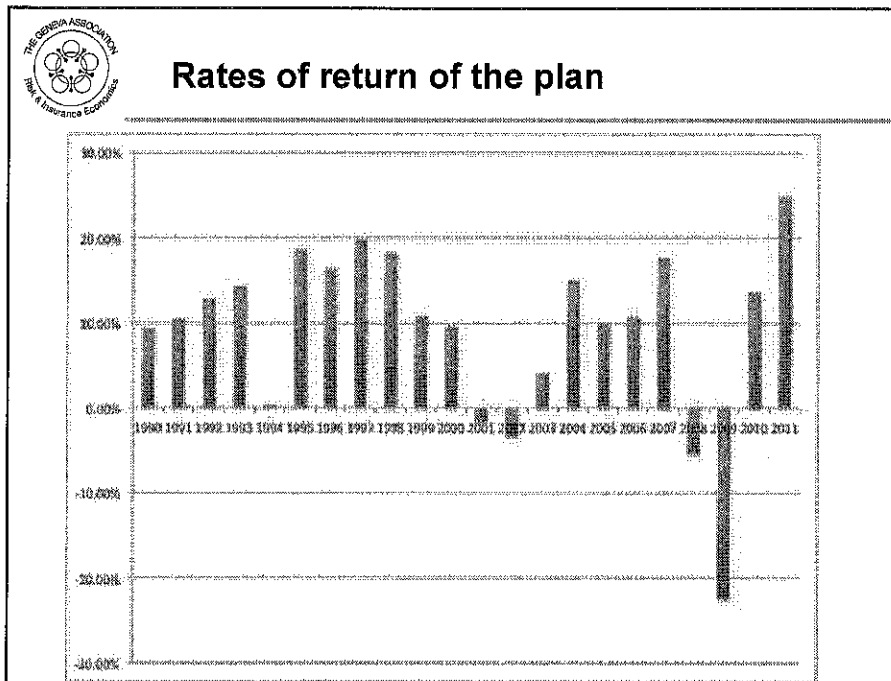
Fiscal year 1999

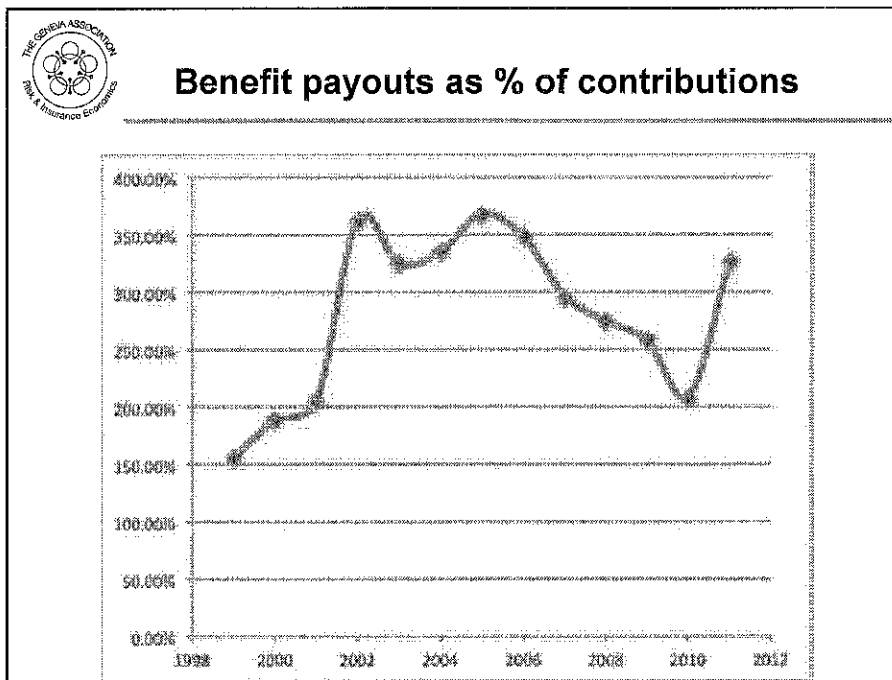
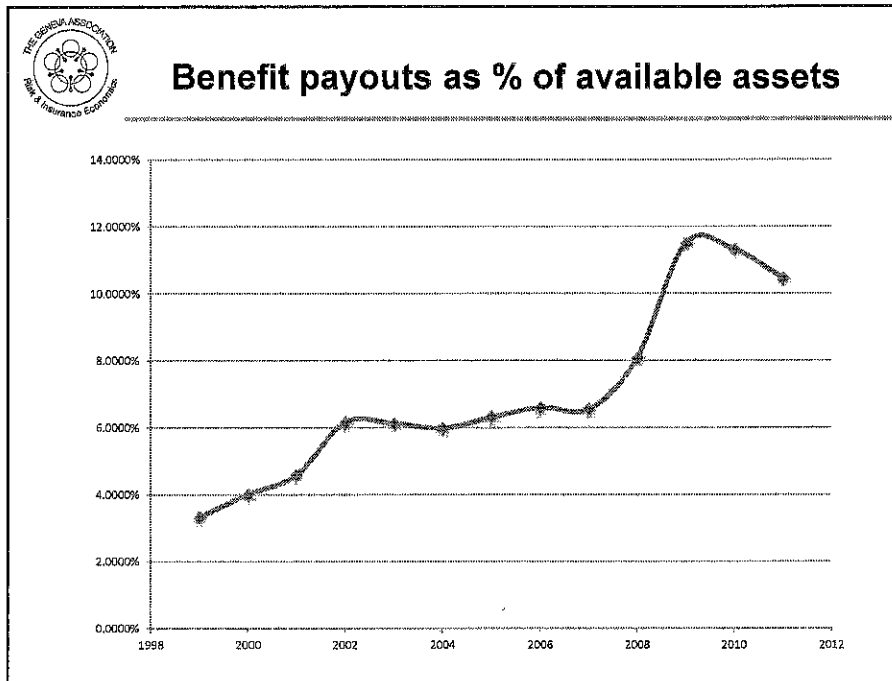
- Assets \$9,535,832,009
 - * Current liabilities \$1,670,822,885
 - * Actuarial accrued liability \$8,551,879,683
- Funded ratio based on market value 115.50%. Based on (smoothed) actuarial value of assets it was 100.80%.
- Total normal cost \$278,144,477
 - * Employee contributions \$136,906,335.
 - * Employer's annual required contribution: \$138,440,544 (after amortization of past gains).
 - * Actual employer contribution: \$60,781,723.
- Benefit payout \$372,389,829.
 - * That's 3.33% of available assets.



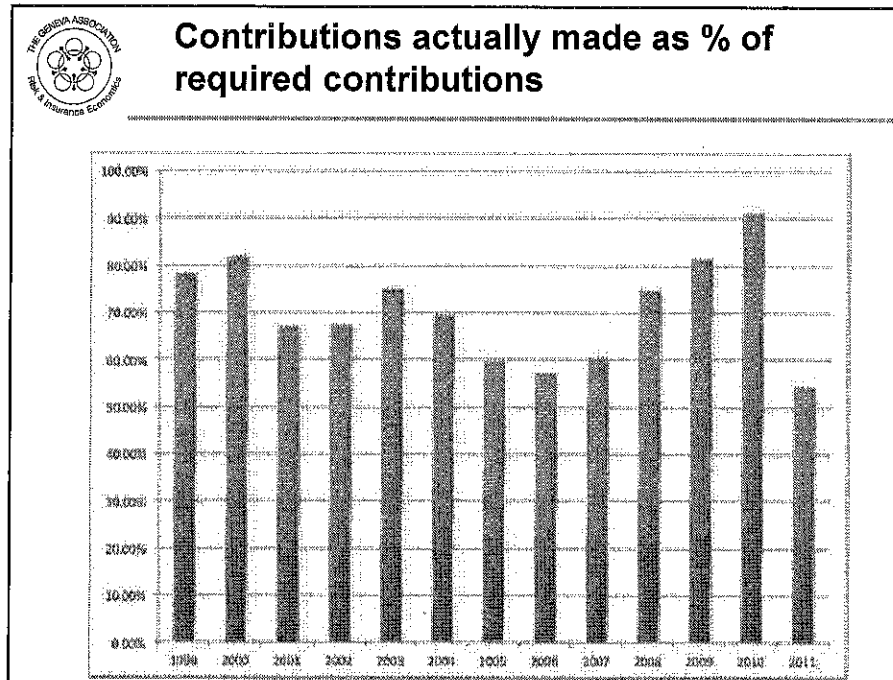
Fiscal year 2011


- Assets \$11,283,027,138
 - * Current liabilities \$970,264,974
 - * Actuarial accrued liability \$16,940,626,445
- Funded ratio based on market value 60.88%. Based on (smoothed) actuarial value of assets it was 59.90%.
- Total normal cost \$ 299,247,550
 - * Employee contributions \$ 175,805,483
 - * Employer's annual required contribution: \$123,442,067
 - * Supplemental cost to amortize deficit: \$10,931,000
 - * But benefits increases were granted increasing SC to \$11,654,000
 - * Actual employer contribution: \$206,031,563
- Benefit payout \$1,077,980,337.
 - * That's 10.45% of available assets.





165



 **Additional trouble with contributions**

- * Approximately half of required contributions are made by employees, through automatic payroll deductions. Those are not discretionary. Thus the discretionary underfunding is actually twice as bad.
- * States and cities often make contributions by issuing pension obligation bonds:
 - Pension obligation bonds are bonds issued by a state or local government to fund a required payment to the pension fund sponsored by the said municipality.
 - State/municipal pension plan sponsors have issued such bonds in majority of U.S. states.
 - The illusion is that bond interest rate will be lower than the plan actuarial valuation rate.



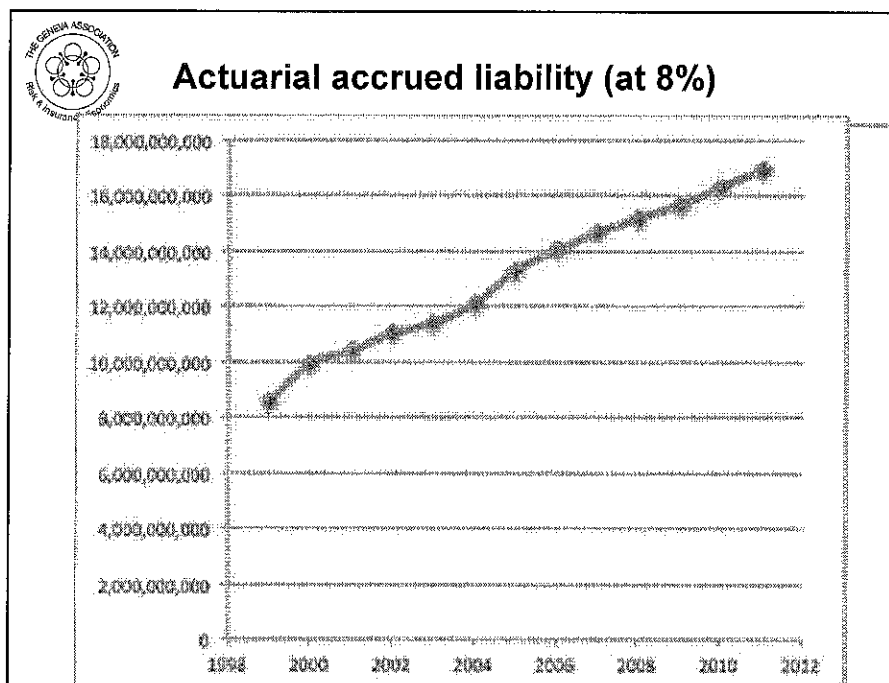
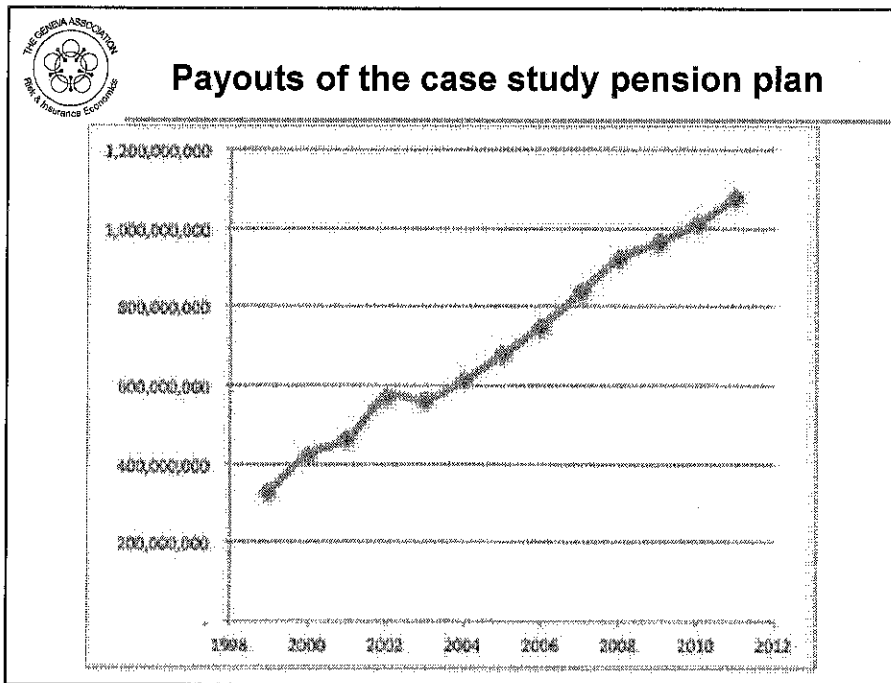
Ominous case of Philadelphia: May 1, 2008, Bloomberg.com story

- * Former Philadelphia Mayor Edward Rendell sold \$1.29 billion in pension bonds in 1999.
- * While trying to balance the city budget, Rendell's successor, John Street, did not make full contributions to the pension fund.
- * As a result, Bloomberg reported, "The city has about 54 percent of the funds it needs to pay pension benefits over the next 30 years, about the same as in 1999 before it sold the bonds."



Consequences of the lack of market pricing

- * If unsustainable promises are granted by a system priced by the market, what happens?
 - Re-pricing
 - De-risking
 - Changes in minimum guarantees
- * What are the consequences of lack of market pricing when the financial pressure shows at the scene?
 - Reforms: tax increases, employee contributions increases, and reductions of future benefits.
 - Those reforms have one thing in common: They reduce incentives for production of future benefits.
 - Down the road we may find out that growth projections may have to adjusted downwards, starting another round of similar "reforms".



168



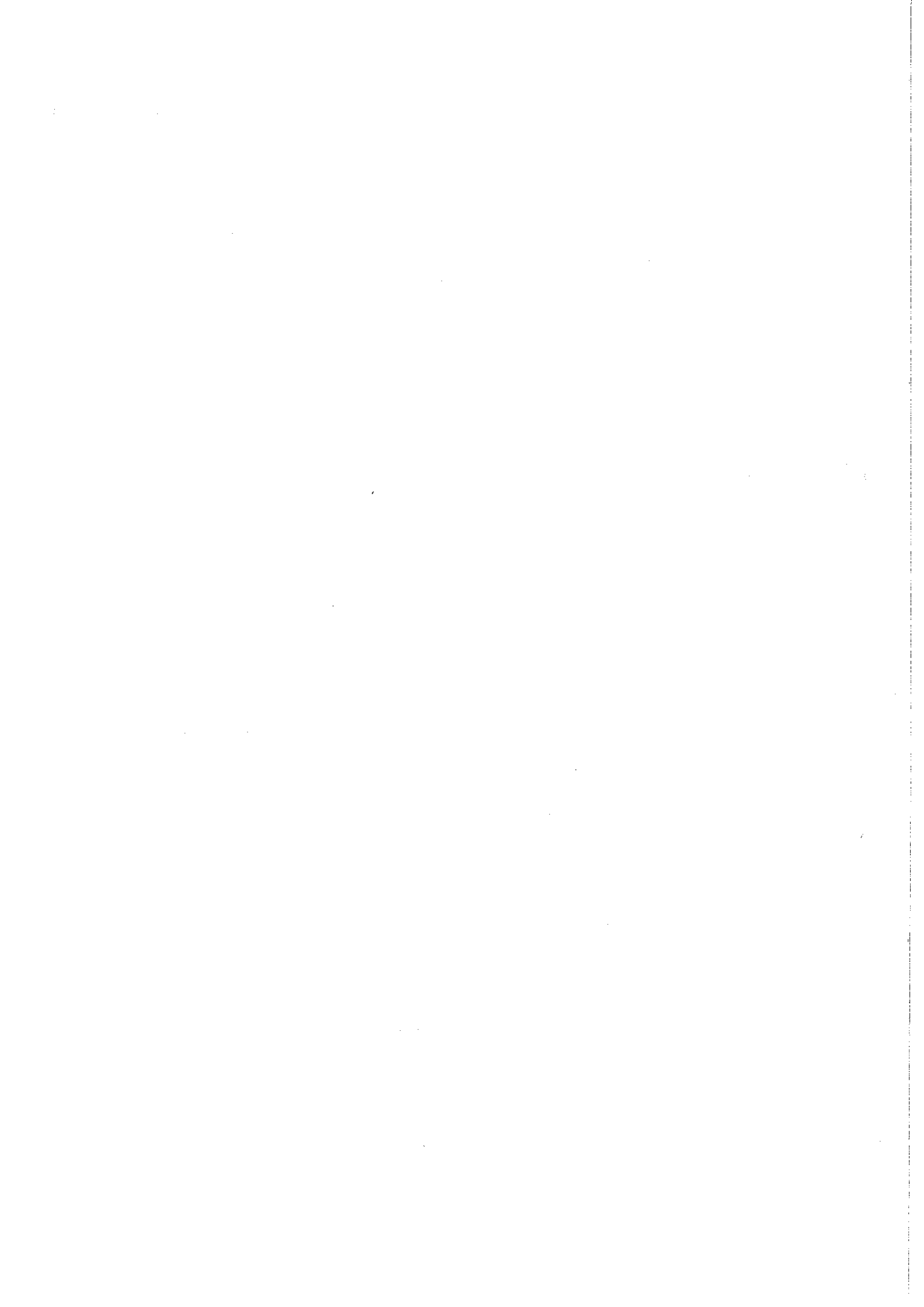
Financial repression

- * Measures that governments employ to channel funds to themselves, that, in a less controlled market, would go elsewhere.
- * Intended consequence: Low nominal interest rates on government bonds.
- * Unintended consequence: High valuation of guaranteed pension benefits.
- * Unintended consequence: Fewer economic projects and lower growth, resulting in even greater difficulty in funding pension benefits.



Seek a balance among the Four Pillars

- * Key insight of a Four Pillars pension system: For the economy to flourish, the Four Pillars should work in concert.
- * Pillars 1 and 2 lack direct market pricing, and as a result, are likely to grant benefits that are too inexpensive. On the other hand, they grant benefits that workers desire, in a form workers value.
- * But the real economic cost will eventually be realized, and when it is, its heavy burden will fall on the entire economy, with dire long-term consequences:
 - Unforgiving labor markets
 - Lack of opportunity for younger generation
 - Fewer children
 - Reduced long-term growth
- * Pillars 3 and 4 provide market signals of the true economic costs, those signals should be cherished, not condemned.
- * Insurance should feel expensive!



Insurance: Part of the Global Solution for Financing Healthy Retirement

Kurt Karl

How re/insurance can support individuals, corporates/pension plans and governments

Swiss Re



Insurance and reinsurance products

Insurance solutions for individuals

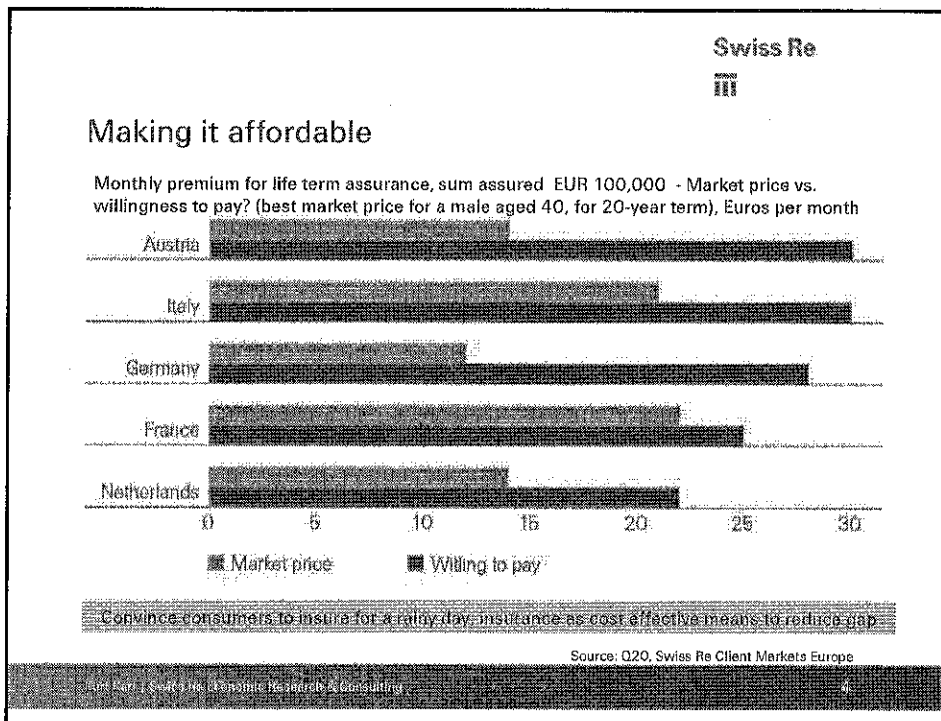
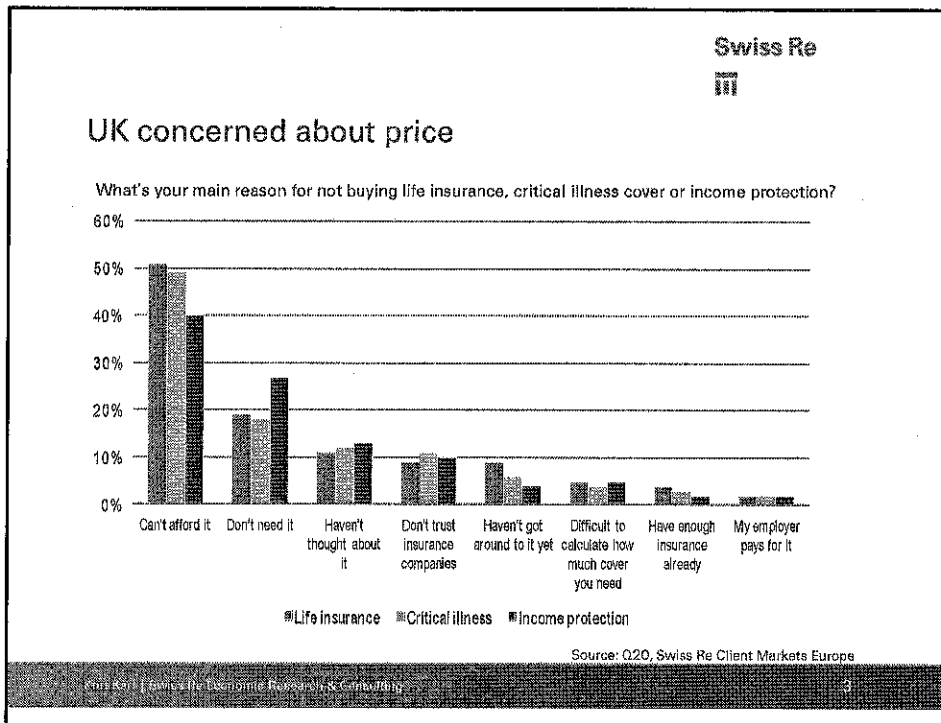
- Traditional term life insurance
- Health products (medical, disability, LTC, accident)
- Savings products
- Longevity products (pension and annuity products)

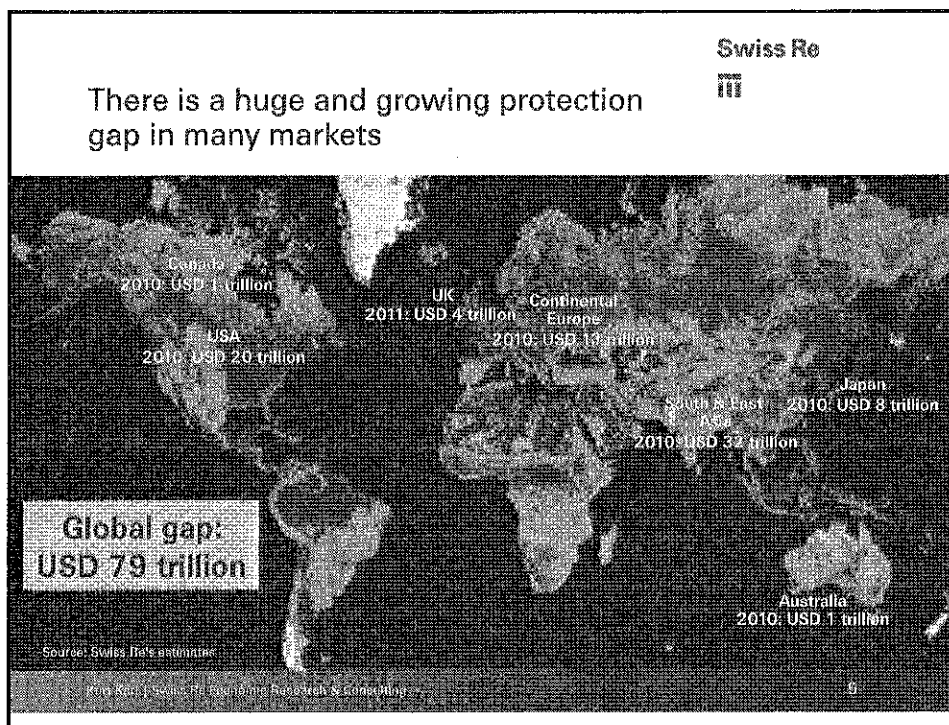
Reinsurance solutions for pension plans and primary insurers

- Traditional reinsurance (eg quota share reinsurance of term life, disability and other products)
- Pension buyouts (transfer of assets and liabilities from pension plans or primary insurer to reinsurer)
- Some companies are also active in reinsuring savings products
- Longevity reinsurance solutions

Challenge: limited re/insurance capacity – capital market solutions are needed for, eg. longevity products

170





Swiss Re
III

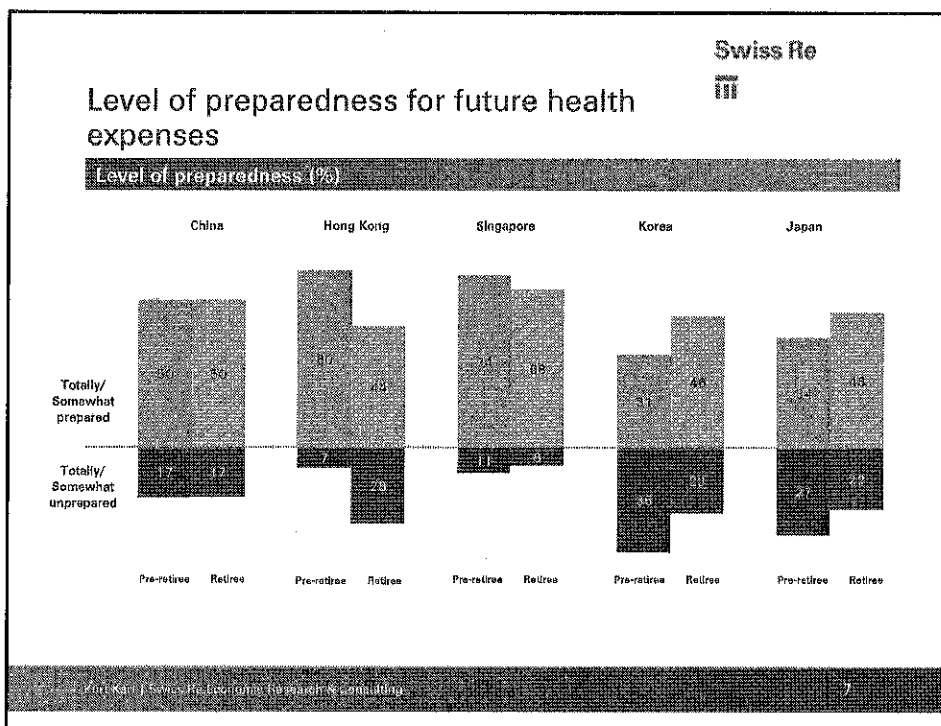
Health Protection

Issues / questions

- How prepared pre-retirees and retirees feel they are for future healthcare needs?
- What sources of funds do pre-retirees and retirees plan to use to pay for future health and medical expenses?
 - Is government healthcare provision sufficient?
 - How much have they set aside in liquid assets as savings for medical expenses?
 - In the case of a critical illness, how much do they think their insurance can cover?
 - Will they rely on family's financial support?
 - Any plans to buy more health insurance for self or family members?
 - What are the barriers to purchase?

©

172



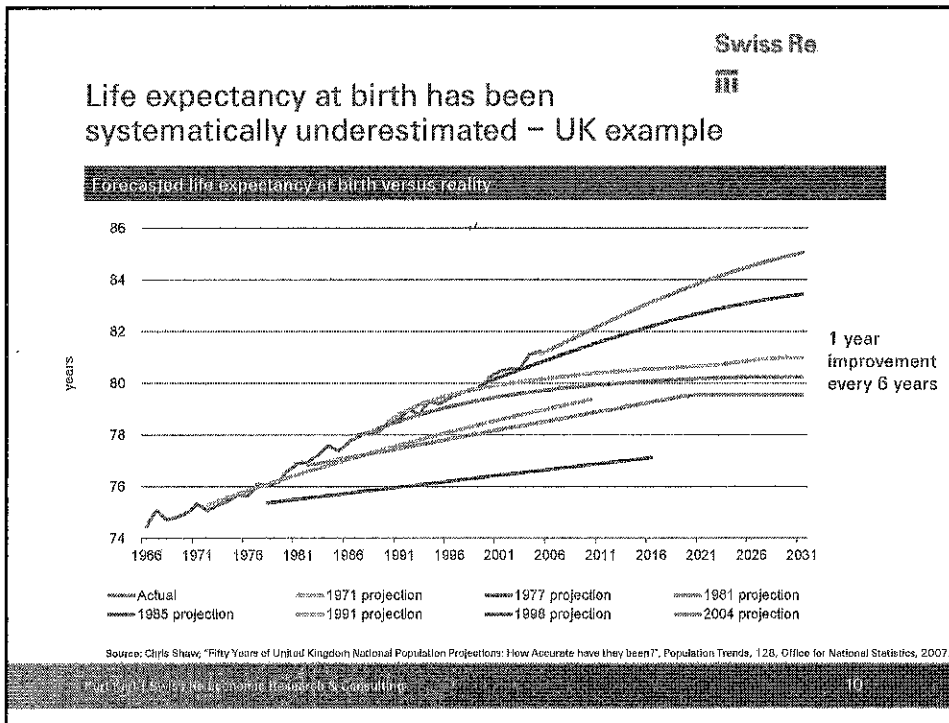
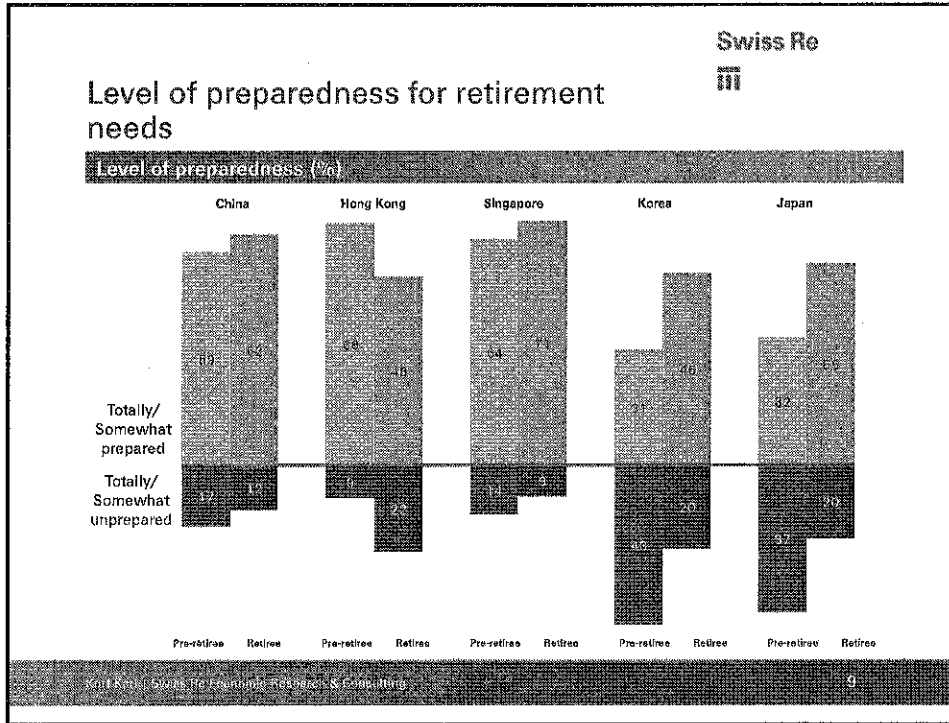
Swiss Re
III

Retirement Protection

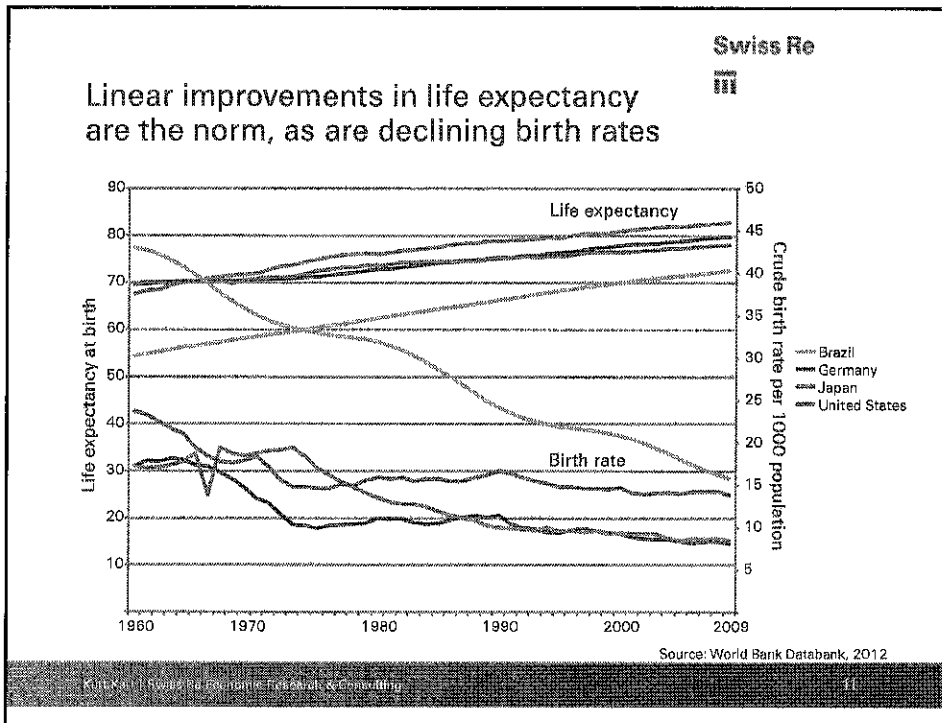
Issues / questions

- How prepared pre-retirees and retirees feel they are for retirement needs?
- When did they start planning financially for their retirement? And, when do they plan to retire?
 - What is the expected quality of life in retirement?
 - Is it related to the level of preparedness felt or with the length of time spent in preparation?
 - How do pre-retirees and retirees feel about government provision?
 - What is their level of preparation in terms of savings, insurance and investment?
 - Any plan to buy more insurance? What could trigger their interest in purchase?

Zurich, Korea, Taiwan, Hong Kong Research & Consulting



Handwritten mark



Swiss Re
III

Why is longevity different to other insurance risks?

Taking longevity risk is a bet on the future life expectancy trend

Longevity risk = $\underbrace{\text{aggregate longevity risk}}_{\text{systematic risk, not diversifying}} + \underbrace{\text{individual longevity risk}}_{\text{unsystematic risk, diversifying}}$

Individual longevity risk

- not known how long an individual will live, but this can be managed through risk pooling


Aggregate longevity risk

- is a trend risk, pooling does not mitigate it (→ investors require longevity risk premium, like equity risk premium for stocks)
- trend not known ex ante, future life expectancy of an age cohort must be estimated, outcome depending on model used (model risk)
- from an economic/solvency perspective, substantial amounts of capital is required

Longevity capital market solutions are required – but longevity markets have not yet emerged

KPMG LLP, Swiss Re Economic Research & Consulting

12



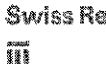
Longevity capital markets solutions are not yet prominent – but they are needed

Longevity capital markets solutions: what demand and supply side expect

1. **Unbalanced demand and supply for longevity risk protection** – huge demand for protection, insufficient "natural longevity risk takers"
2. Demand side wants **indemnity-based solutions** (no basis risk) – capital markets prefer **index-based solutions** (larger volumes, less asymmetric information, more transparent, more liquid)
3. Demand side wants **long-term solutions**, capital markets prefer **short term solutions**
4. **One bond issued in late 2010 (Swiss Re "Kortis")** – for USD 50 million on longevity trend risk, which would trigger in the event there is a large divergence in the mortality improvements experienced between male lives aged 75-85 in England & Wales and male lives aged 55-65 in the US.

Life re/insurers with their expertise will play a pivotal role in developing capital market solutions

© 2011 KPMG LLP, a Swiss Re member firm, Chartered Accountants & Consulting
7



Re/insurers' value proposition

Sizable mortality business, expertise and access to capital markets

Natural hedge: Negative correlation with mortality business

- This is not a perfect hedge due age cohorts, geographical and socio-economic differences

Expertise

- Life re/insurers are experts in mortality and longevity, more so than pension fund and asset managers.

Life re/insurers are often trusted names, though this depends on the Brand

- Longevity business has very long durations (30-60 years), and trustees of pension funds will weigh price against promise to pay over the long term

Access to capital markets

- Re/insurers are increasingly relying on capital markets to offload their peak risks and one longevity bond has been successfully launched (though it was for a small amount – USD 50 million)

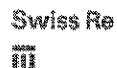
Ability to take basis risk

- Life re/insurers have the ability to take on the basis risks that banks prefer not to hold. Life re/insurers can provide an indemnification product, not just a hedge based on a longevity index

Once longevity capital markets emerge, the size of this market becomes very large, very quickly

© 2011 KPMG LLP, a Swiss Re member firm, Chartered Accountants & Consulting
8

76



Summary on longevity solutions

There is a need for large scale longevity risk transfer solutions

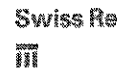
- Longevity risk is a real, underestimated and slow-burning risk, for individuals, corporations, insurers, and societies as a whole
- Longevity is a huge opportunity for the re/insurance industry, but there is ...
- ... insufficient capital in re/insurance industry to deal with the global longevity risk
- Tools are now being developed in
 - re/insurance and banking industries (eg longevity swaps)
 - capital markets (longevity-linked instruments, such as Swiss Re "Kortis")

Deep and liquid longevity capital markets are a prerequisite for large scale insurance solutions



Thank you

To receive your copy of sigma publications, email sigma@swissre.com or visit www.swissre.com/sigma



Legal notice

©2012 Swiss Re. All rights reserved. You are not permitted to create any modifications or derivatives of this presentation or to use it for commercial or other public purposes without the prior written permission of Swiss Re.

Although all the information used was taken from reliable sources, Swiss Re does not accept any responsibility for the accuracy or comprehensiveness of the details given. All liability for the accuracy and completeness thereof or for any damage resulting from the use of the information contained in this presentation is expressly excluded. Under no circumstances shall Swiss Re or its Group companies be liable for any financial and/or consequential loss relating to this presentation.



Are Future Pensioners Systemically Important? Shifting Risk upon the Individual in the Second and Third Pillar

Lorenzo Savorelli


Agenda

- I. From collective to individual risk-bearing
- II. Italy: still difficult transition to private pensions
- III. Drivers of the Probability of buying a pension fund


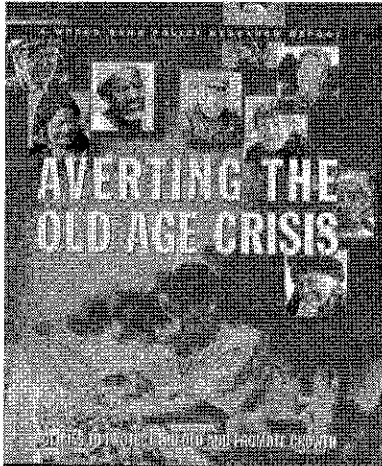


Agenda

I. From collective to individual risk-bearing




How it all began: the multi-pillar agenda




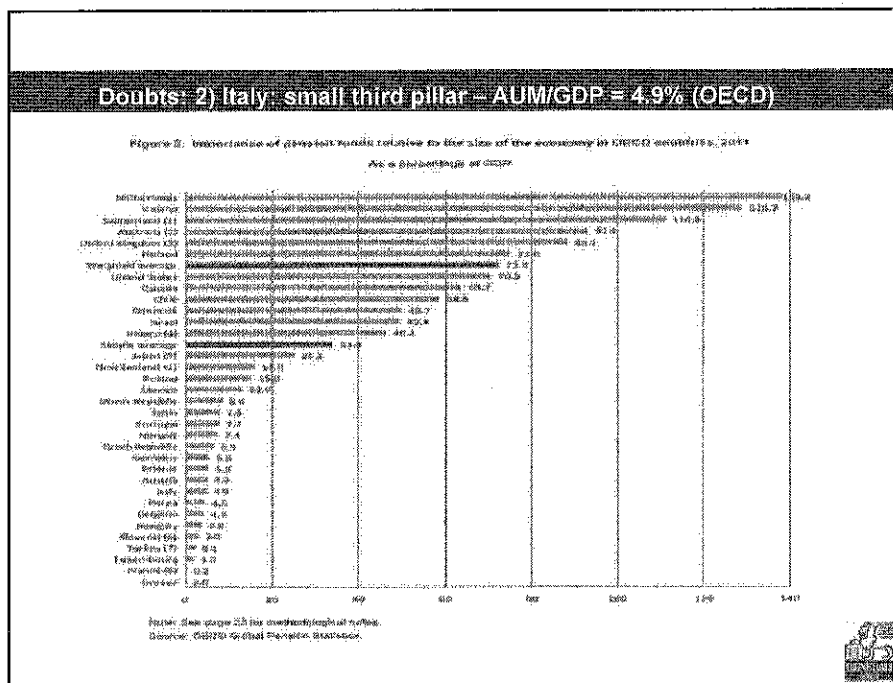
15-0

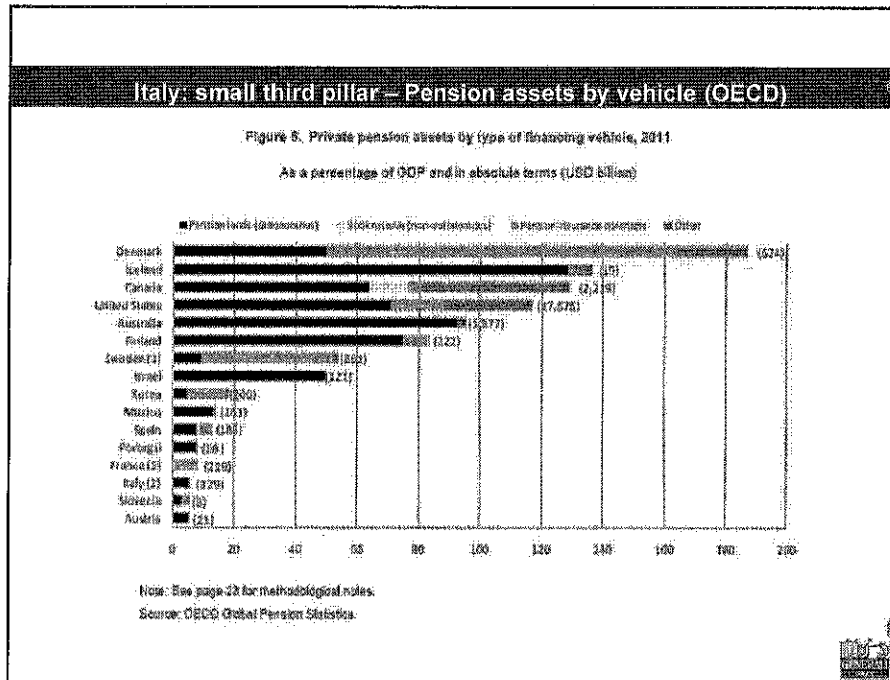
But doubts: J. Kay



IS SOCIAL SECURITY A WORTHY PONZI SCHEME?

John Kay, FT, Sep. 2012



- Doubts: 3) US GAO, Social Security Council – UK Actuaries**
- Privatizing risks has not guaranteed a better replacement ratio
 - Surveys show how bad people take savings/investment decisions
 - US and UK both examine State guarantee proposals to reintroduce some DB elements
 - Worry about excessive individual risk burden present also in very advanced market economies

Systemic Implications: Italy

- Shift to NDC system and to third pillar is set to dramatically lower public pension replacement rates. Future public pensions will be subjected to risk from a prolonged stagnation in activity and faster than expected ageing
- Without a strong contribution from other sources of saving the standard of living of future pensioners may significantly deteriorate
- Governments may be forced to bail them out or guarantee them

**Systemic Implications: Italy**

Savings must be encouraged, but also channeled to appropriate vehicles in order to:

- Ensure duration and liquidity match future pensioners needs
- Make sure that pension saving is shielded (to the maximum extent possible) from boom bust/cycles in asset prices)
- Avoid overinvestment in certain asset classes (real estate bubbles), due to lack of confidence in specific pension products



Systemic implications: Italy

- Pension funds managed by private entities, including insurance, should in theory serve these purposes (as well as acting as a source of financial development and improve governance of listed firms): their promotion therefore should be seen as a policy priority
- Italy is a clear example of the need for these products and also of the (so far) disappointing level of development.



Agenda

- II. Italy: still difficult transition to private pensions



12/21

Pension reforms in Italy...

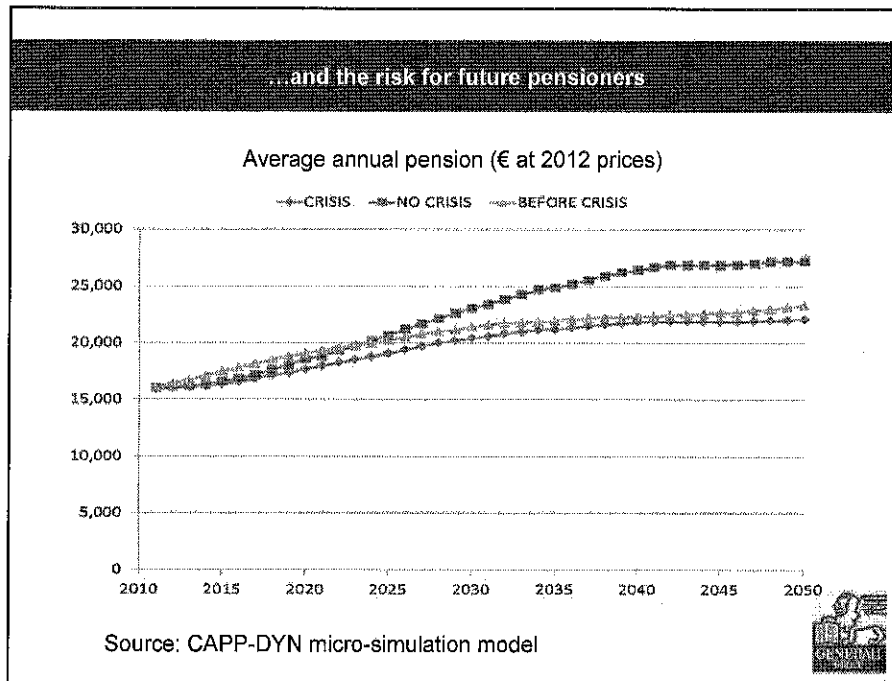
- In the mid-90s pressures on public finances forced Italy to move from a DB pension system to a notional DC one in which Old-age pension are related to the contributions paid over the whole working life (capitalized at a five-year moving average of GDP growth) and to retirement age.
- The accrued capital is converted into annuity using transformation coefficients which are revised periodically to account for demographic changes.



...and the risk for future retirees

- New rules expose future retirees' pension income to basically two risks:
 1. «Financial» risks: due to the fluctuation of the GDP rate used to capitalize contribution
 2. Demographic risks, via the impact of transformation coefficients
- These can generate large swings in expected pension adequacy





Italy: CENSIS-COVIP 2012 – why do people not buy into private pension? ¹⁶

- 41.4%: It is too expensive (high costs, fees)
- 28.4%: No trust in third pillar / too many changes in reforms
- 19.1%: Too young to think about it (procrastination!)
- 8.8%: TFR (severance payment) better as is not in pension!
- 8.4%: Irreversibility of switch to third pillar
- 4.0%: Public pension appears sufficient to cover needs

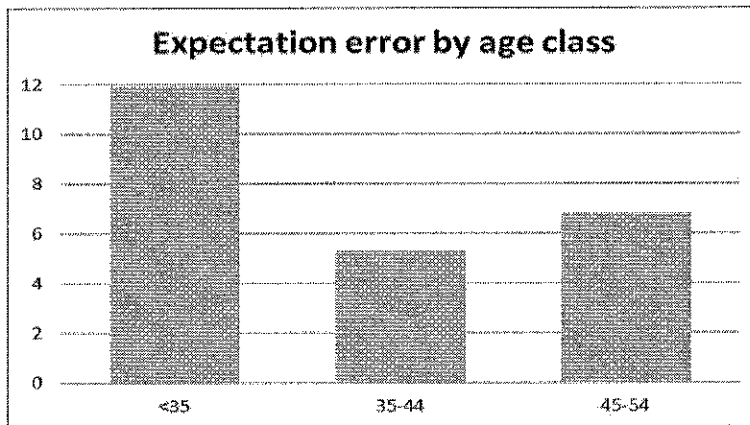
Are future pensioners aware of the risks?

- The new system has made pension computation very difficult and, so far, the government has provided little information about expected replacement rates
- Expectations on pension adequacy can be found in the Survey of Household Income and Wealth (SHIW) prepared every two years by the Bank of Italy.
- In the latest (2010) release, questions are asked about the expected replacement rate and whether the worker has considered which sources of income he/she will have once retired.

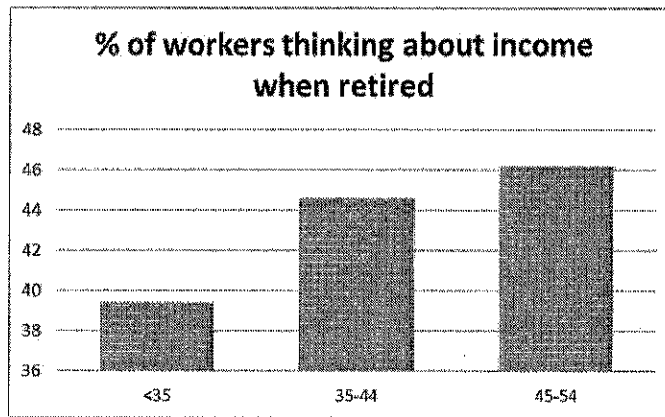


Are future pensioners aware of the risks?

Expectation error by age class



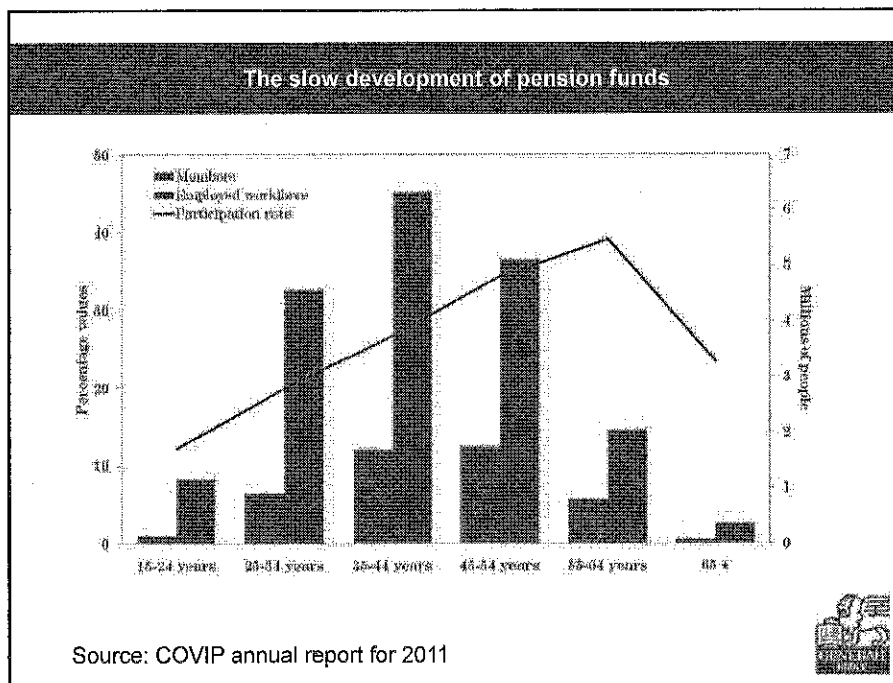
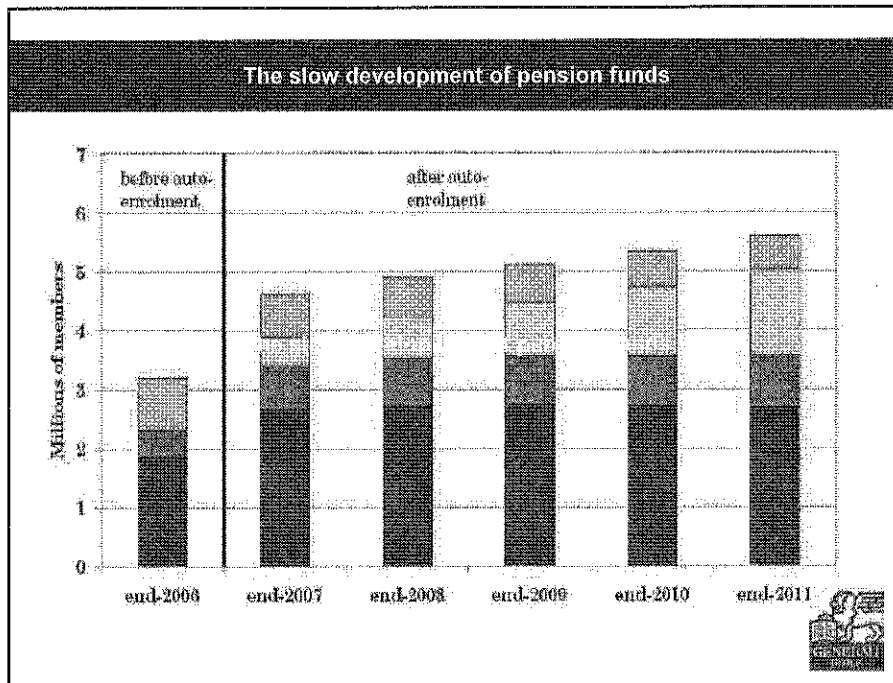
18

Are future pensioners aware of the risks?**The slow development of pension funds**

- In 2007 the government enacted a series of reforms aimed at promoting private pensions, to strengthen the II and III pillar of the pension system
- Self enrolment into a fund was set as the default option for II pillar contributions, with fiscal advantages for the workers and to encourage employers to top up contributions, but it is impossible to opt out subsequently
- On top of that, fiscal advantages were established for III pillar pensions
- The results have been so far disappointing, both in terms of workers' participation and size of contributions



138



Agenda

■ III. Drivers of the Probability of buying a pension fund



Are the two problems related?


- Several studies found that expectation and psychological biases (such as procrastination of decisions and lack of patience) have a powerful role in shaping investment decisions, especially when the planning horizon is long
- Recent studies found that expectations on pension income as well as financial literacy can explain (the lack of) participation to pension funds



190

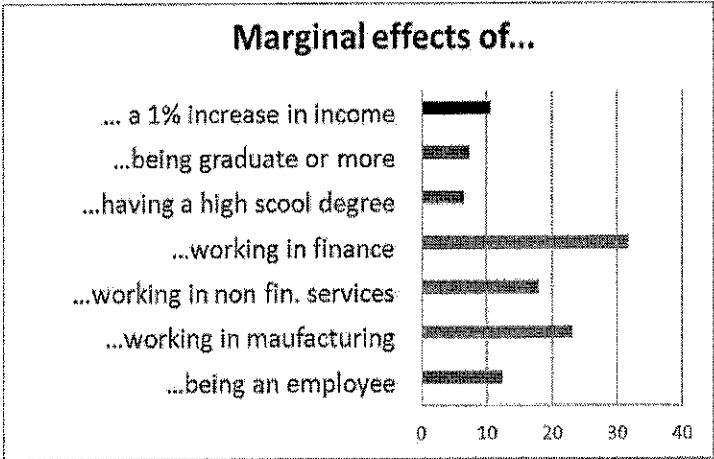
Are the two problems related?

- We perform a Probit estimation of the probability of enrolling a PF
- To do that we use the SHIW database to assess what determines the choice of enrolling in a pension fund
- We consider four drivers:
 1. Personal characteristics (household equivalent income, occupation, degree)
 2. Expectation (on retirement age and replacement rate) & awareness of the issue
 3. Financial literacy
 4. Familiarity with financial products (asset classes owned and others)




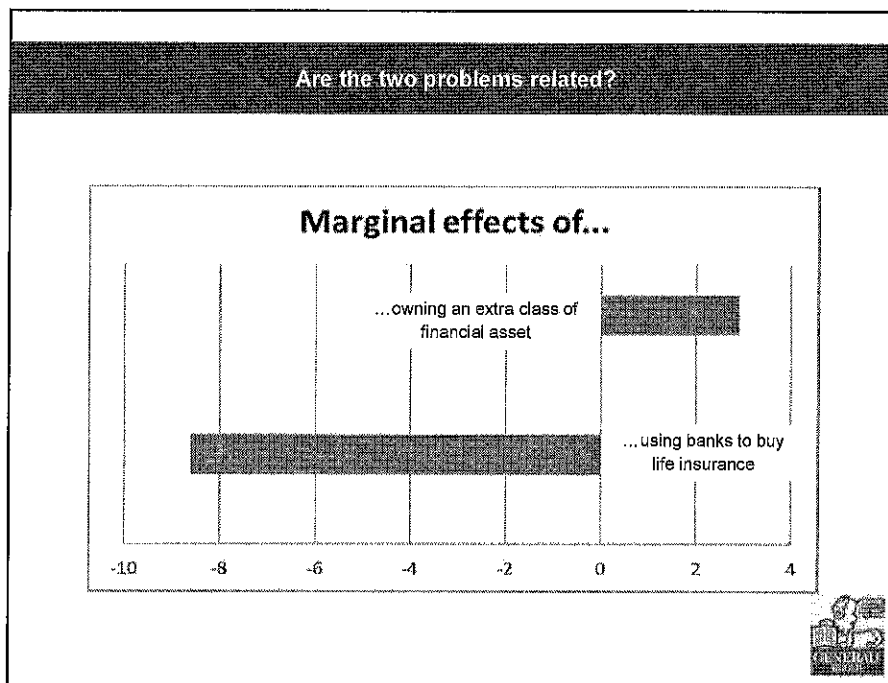
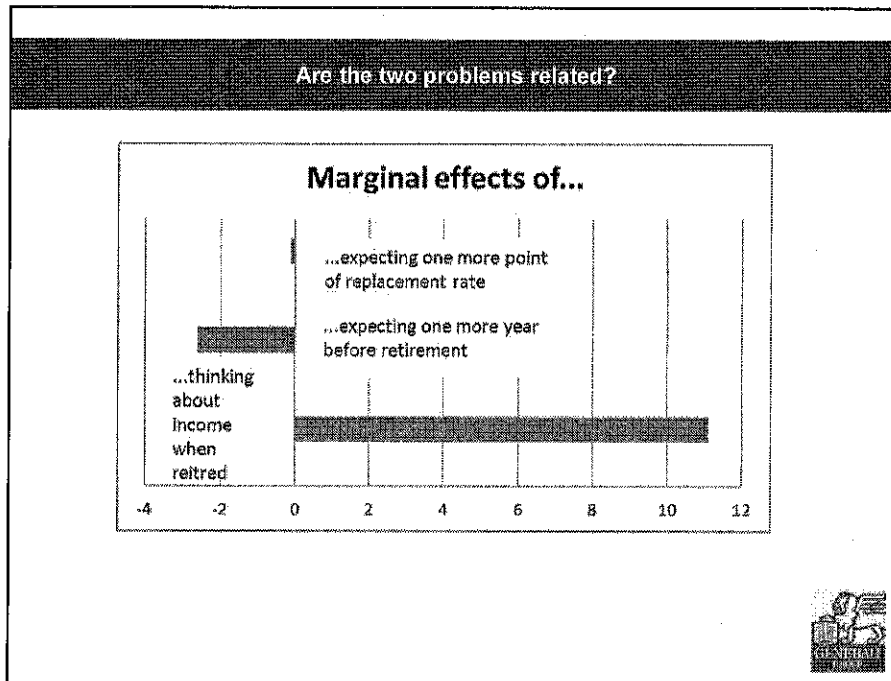
Are the two problems related?

Marginal effects of...



Factor	Marginal Effect (%)
... a 1% increase in income	~10
...being graduate or more	~8
...having a high school degree	~7
...working in finance	~32
...working in non fin. services	~18
...working in manufacturing	~22
...being an employee	~12





192

Are the two problems related?

- Evidence of myopic behavior (minus sign on years before retirement), partially corrected by effect of awareness.
- Being informed (=have enough information) about prospective income provides a strong incentive to plan for retirement.
- This appears to be the priority, rather than providing future pensioners with financial education.

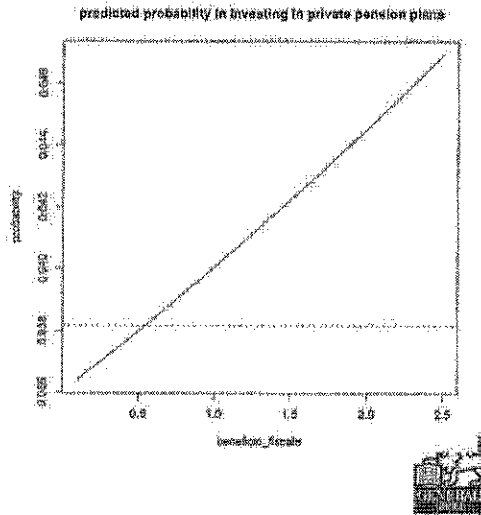
**Italy: Are fiscal incentives effective?**

- The 2007 reform foresees that PF contribution up to 5000 €/year can be deducted from personal tax base.
- This was meant to boost PF enrolment as part of the third pillar, as the fiscal benefit would increase effective returns.
- In an additional paper using "actual" data on fiscal statement, we regressed the probability of enrollment on several economic and demographic variable, among which the maximum amount of fiscal benefit attainable via PF contribution (which depends on the marginal tax rate).



Italy: Are fiscal incentives effective? No...

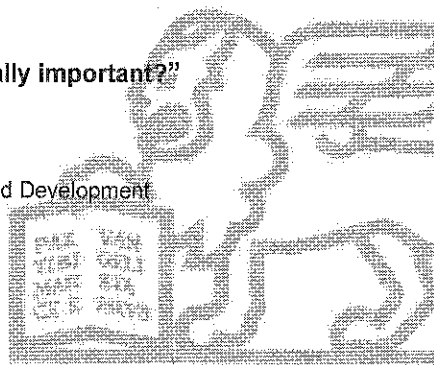
- The average tax benefits for the sample was around 500 €/year. Doubling it would increase participation by just around 0.2 percentage points
- Clearly something else is needed to boost participation...



Assicurazioni Generali

“Are future pensioners systemically important?”

Lorenzo Savorelli, Head of Research and Development



Geneva Association, Four Pillar Conference, December 3-4, 2012

Global Demographics and Its Impact on the Third Pillar

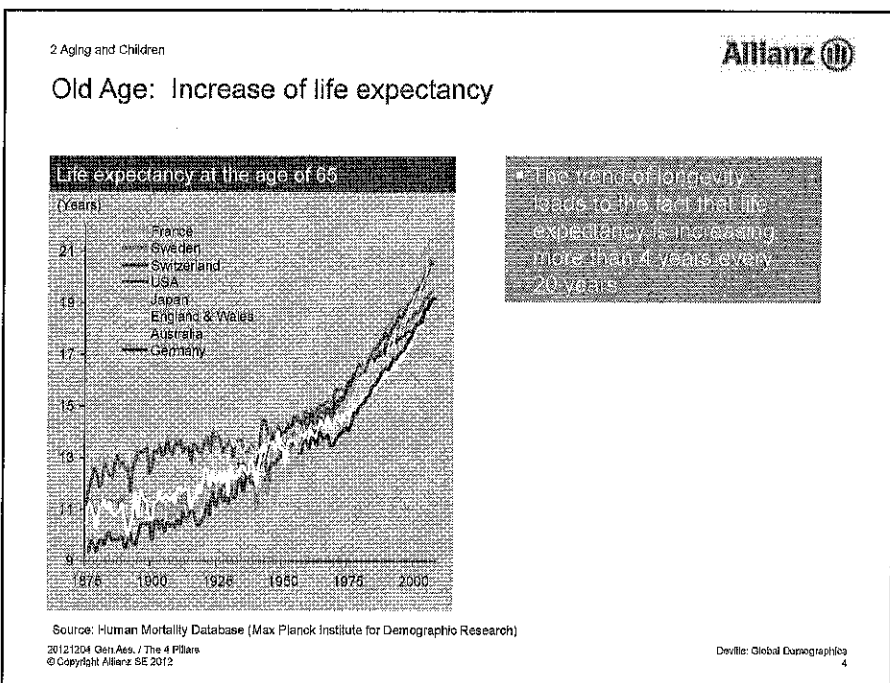
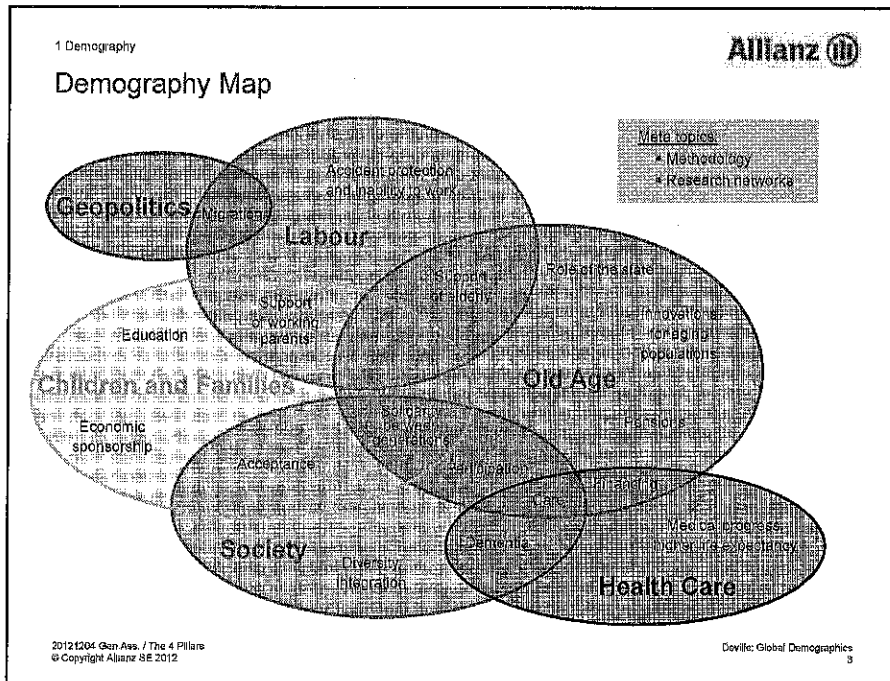
Volker Deville

Contents


- 1 Demography Map
- 2 Aging and Children
- 3 Global Demographic Outlook
- 4 The Future Role of the Third Pillar



195

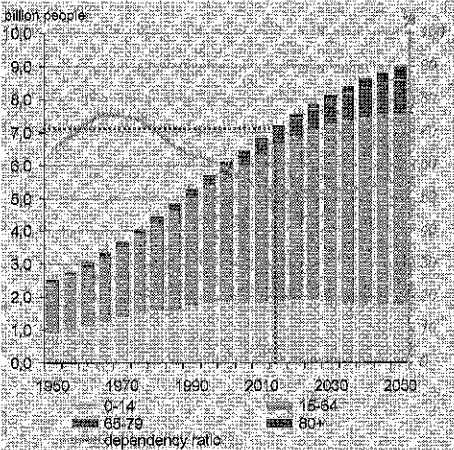


2 Aging and Children

Allianz 

The World's fertility slows down, not its aging

Projection until 2050



billions people

10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0

1950 1970 1990 2010 2030 2050

0-14 15-64 65+

dependency ratio


- The world population will grow to 9.1 billion in 2050
- Currently, we witness the "birth peak" (135 mio. newborns)
- In 2050, number of people aged 80 and above will be four times as much as today (400 mio.)

Source: UN and World Bank population projections HNPStats as of June 2009, own calculations

20121204 Gen.Ass. / The 4 Pillars
© Copyright Allianz SE 2012

Deville: Global Demographics 5

3 Global Demographic Outlook

Allianz 

Geopolitics: The "old" Europe is losing its relevance

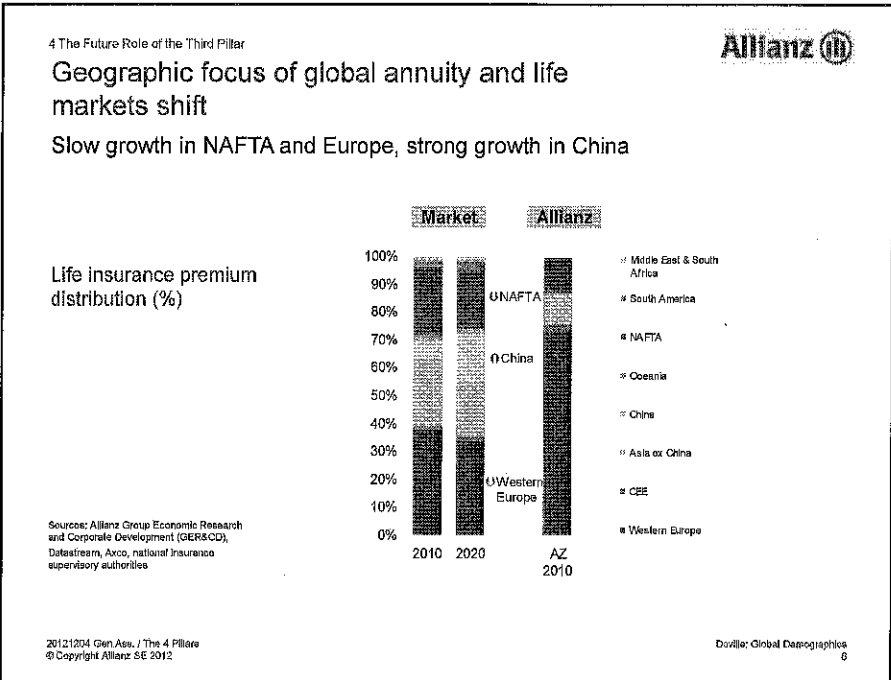
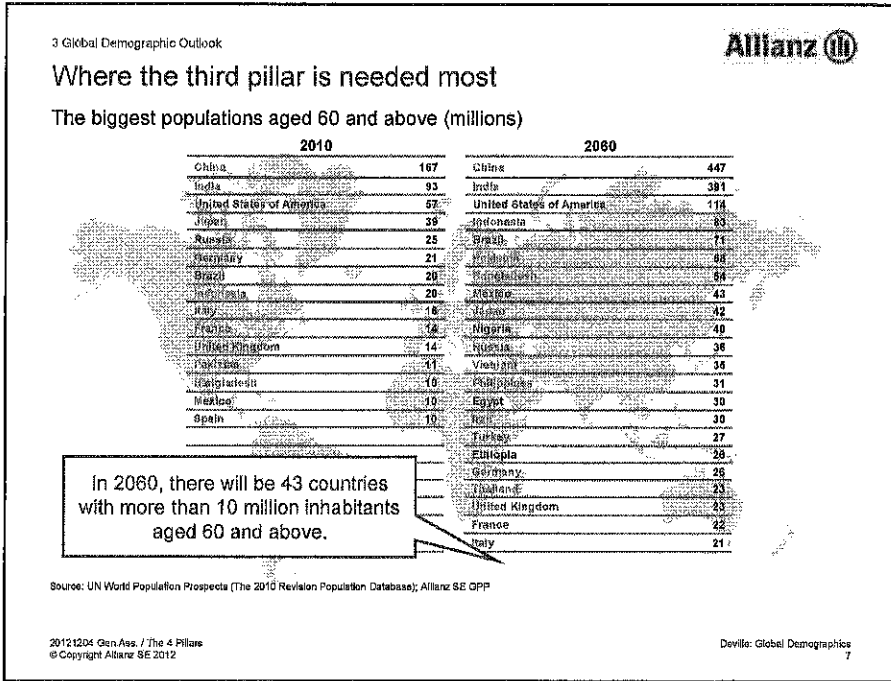
The 25 most populated countries


1970		2010		2060	
China	818	China	1,349	India	1,718
India	663	India	1,225	China	1,222
United States of America	209	United States of America	310	Nigeria	482
Russia	130	Russia	240	United States of America	421
Indonesia	117	Brazil	199	Indonesia	290
Japan	104	Philippines	174	Pakistan	288
Brazil	96	Nigeria	168	Brazil	217
Germany	78	Bangladesh	148	Bangladesh	192
Bangladesh	69	Russia	143	Tanzania	172
Pakistan	62	Japan	127	Congo, Dem. Rep.	169
Nigeria	58	Mexico	113	Chad	166
United Kingdom	56	Philippines	93	Ethiopia	153
Italy	53	Vietnam	88	Mexico	143
Mexico	52	Ethiopia	83	Egypt	128
France	51	Germany	82	Russia	121
Ukraine	47	Egypt	81	Uganda	113
Vietnam	45	Turkey	74	Kenya	113
Thailand	37	Turkey	73	Japan	103
Philippines	37	Thailand	69	Vietnam	101
Turkey	38	Congo, Dem. Rep.	66	Brazil	98
Egypt	36	France	63	Turkey	91
Spain	34	United Kingdom	62	Iran	82
Poland	33	Italy	61	Sudan	77
South Korea	31	South Africa	60	France	74
Ethiopia	29	South Korea	48	Germany	72

Sources: UN World Population Prospects (The 2010 Revision Population Database); Allianz SE GPP

20121204 Gen.Ass. / The 4 Pillars
© Copyright Allianz SE 2012

Deville: Global Demographics 8



4 The Future Role of the Third Pillar Allianz 


Germany: Public pay-as-you-go systems loose importance

1 st Pillar	2 nd Pillar	3 rd Pillar
<ul style="list-style-type: none"> ▪ Publicly managed ▪ Pay-as-you-go ▪ Compulsory 	<ul style="list-style-type: none"> ▪ Employer managed ▪ Mostly funded ▪ Compulsory / voluntarily 	<ul style="list-style-type: none"> ▪ Managed by private insurers ▪ Funded ▪ Voluntary savings
<ul style="list-style-type: none"> ▪ Risks: <ul style="list-style-type: none"> ▪ demography ▪ politics ▪ inflation 	<ul style="list-style-type: none"> ▪ Risks: <ul style="list-style-type: none"> ▪ employer insolvency ▪ longevity ▪ financial markets ▪ inflation 	<ul style="list-style-type: none"> ▪ Risks: <ul style="list-style-type: none"> ▪ longevity ▪ financial markets ▪ inflation
<p>Example</p> <p>Germany</p> <p>81% (222 b.€) rental payments</p>	<p>19% (71 b.€) old-age payments by public and private employers</p>	<p>20% (72 b.€) life insurance payments</p>

Sources: Allianz SE GPP, Statistisches Bundesamt, GDV, 2008. Private savings and own real estate are not considered here.

- Germany already undertook 1st pillar reforms in last decade
- German 3rd pillar is growing, but faces low-interest-environment and regulatory challenges

20121204 Gen.Ass. / The 4 Pillars © Copyright Allianz SE 2012 Devlin: Global Demographics 8

4 The Future Role of the Third Pillar Allianz 

Third pillar is also important for Health Care

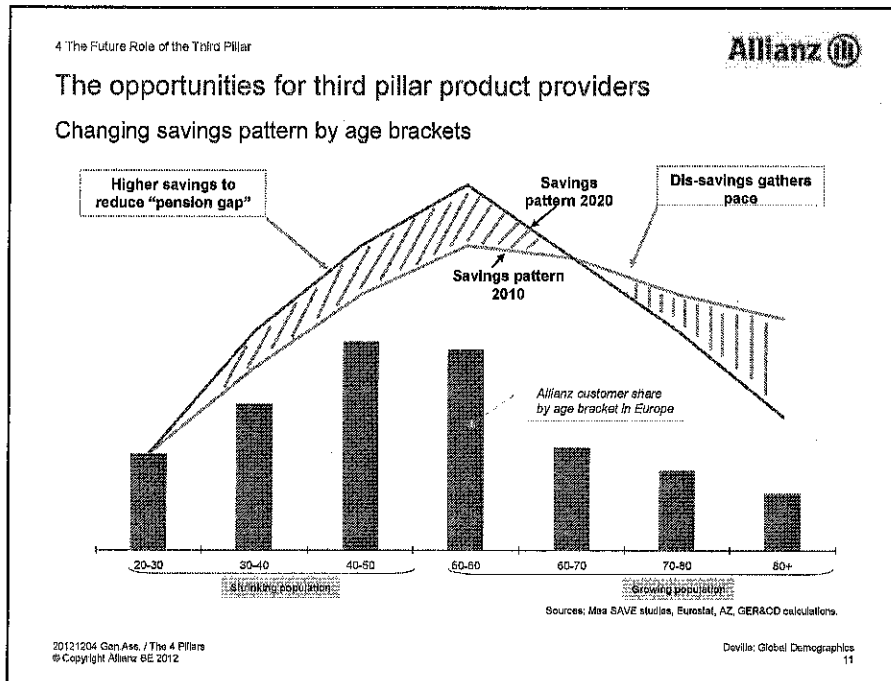
Longevity will increase health expenses –
40% are spent for ages 70-79, 30% for ages 80+

Health care costs
(in 2002 USD per capita and per age cohort)

Country	0-19	20-49	50-64	65-69	70-74	75-79	80+
Germany	2714	3343	3724	4024	4343	4643	4943
France	2824	3224	3624	4024	4424	4824	5224
United Kingdom	1774	2174	2574	2974	3374	3774	4174
Japan	2334	2734	3134	3534	3934	4334	4734
Canada	2444	2844	3244	3644	4044	4444	4844
USA	2404	2804	3204	3604	4004	4404	4804

Sources: Kotlikoff & Haljet (2005), NBER Working Paper No. 11633, Allianz GPP
20121204 Gen.Ass. / The 4 Pillars © Copyright Allianz SE 2012 Devlin: Global Demographics 10

199



4 The Future Role of the Third Pillar

Allianz

Who tackles resilience of the "pillar combination"?

In the last years, many international bodies started research, including borderlines between the four pillars

- Public players: UN / World Bank, OECD, European Union
- Private players: Geneva Association, global insurers, WEF
- Private-Public-Partnerships: like Berlin Demography Forum

But:

- Regulators demand more capital for providers of private products (like life insurance)
- Central banks continue with their low interest rate policies (to support the banking sector), discouraging long-term savings

20121204 Gen.Ass. / The 4 Pillars
© Copyright Allianz SE 2012

Devillo: Global Demographics 12



Conclusion

Due to less children and longer lives, families and public pay-as-you-go systems will not provide the current level of social protection going forward.

Therefore private and individual saving processes must fill this gap. They will gain importance.

However, increased regulation and low-interest-rate policies of central banks limit the effectiveness of the third pillar.

20121204 Gen.Ass./The 4 Pillars
© Copyright Allianz SE 2012

Deviller: Global Demographics 13

Thank You
for Your Attention

www.allianz.com





Disclaimer

This presentation is subject to the following disclaimers.

Author and Rights of Usage

The material is the personal opinion of the presenters, not necessarily the opinion of the management of Allianz SE. This presentation is intended for internal and external recipients. However, forwarding parts to any external recipient, as well as the extraction of graphics or pictures for external use, needs prior approval of Allianz SE GPP. The presentation slides may only be used in the complete and unchanged format.

Forward-Looking Statements

The statements contained herein may include statements of future expectations and other forward looking statements that are based on presenters' or management's current views and assumptions. Such statements involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. The company assumes no obligation to update any forward-looking statement.

No duty to update

The company assumes no obligation to update any information contained herein.

The Fourth Pillar— Applying the Circular Economy, Stock Management and Caring to People

Walter R. Stahel



The magic of creating jobs locally, reducing resource consumption, GHG emissions, waste

- **The potential for substituting manpower for energy**, report to the Commission of the European Communities, Brussels, 1976 (Stahel and Reday-Mulvey)
published 1981 as “Jobs for Tomorrow”.
- **The conclusion** of this study was that a Circular Economy will create jobs locally and reduce resource consumption, GHG emissions, waste.
- **For the Fourth Pillar, the key is that a Circular Economy is based on stock management.**

203

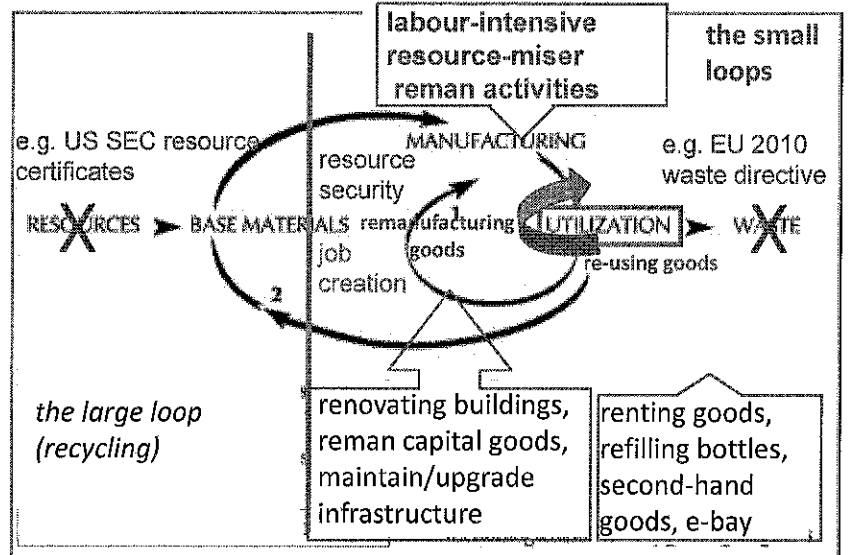


Stock management dominates society

- * **Stock management is dominant in society:** culture and cultural heritage, education and training, knowledge and know-how, people, health and skills, nature and environment.
- * **Stock management is ruled by CARING and value maintained and upgraded.**
- * The Circular Economy extends stock management and CARING to physical goods, partly replacing *fashion, value added and flow management of the industrial throughput economy.*



Economics of the Circular Economy to manage stocks locally, and its drivers





Managing and taxing people as a 'stock'

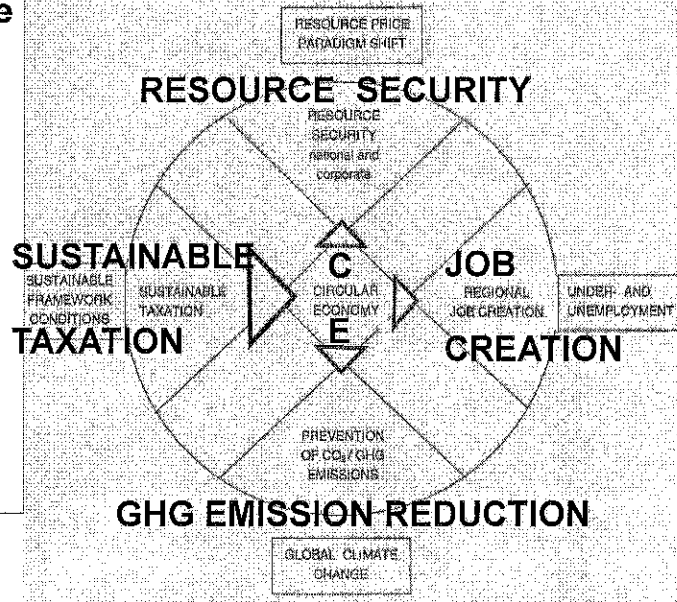
- Youth unemployment and unused silver workers are a terrible waste of economic (stock) value.
- Human labour is a qualitative resource: skills are a resource which rapidly deteriorates if not used.
- *In contrast, a ton of coal or a barrel of oil left in the ground does not deteriorate in value.*
- Sustainable taxation means taxing non-renewable resources, and not taxing renewable resources. Labour, human work, is a renewable resource – taxing people is wrong.

Sustainable taxation is a booster to

increase resource security, and jobs

prevent GHG emissions

Copyright/author:
Walter R. Stahel
2011



205



Currant professions of 'stock' Silver Workers

- **Highly skilled individuals in stock management:**
orchestra conductors and musicians,
politicians,
medical doctors and lawyers,
scientists, engineers and architects, craftsmen
teachers,
scientists and engineers in upgrading techno-stock,
car mechanics specialising on old-timer vehicles.
- **Dedicated individuals:**
CARING for parents and grandchildren,
counselling, grey panthers, 3rd World projects



Innovative activities for Silver Workers

- **Trust-based activities:**
retired UK policemen work for UK insurers as
claims adjusters (e.g. explaining the option of
withdrawing a doubtful claim),
retired insurance managers sell tailored-made
policies to elderly clients.
- **Selling experience:**
engineers and craftsmen teaching apprentices,
engineers engaged in maintenance & upgrading
of (e.g. electro-mechanical) infrastructure (ABB,
Alstom, EADS)



How companies can innovate

- The Travellers Insurance began in the mid-1980s to prepare employees for an active retirement.
- It started a job agency for its retired employees who accepted to work on temporary assignments (maternity leaves, sickness, holidays).
- For the same hourly fees, these people are more productive than 'normal' temps as they know the insurance business inside out.
- The job agency took on employees from, and hired temps to, other insurers. It is now independent.



The positive 'side'-effects of a continued activity beyond the 'age of retirement'

- Continued professional activity reduces the risk of Alzheimer and other dementia illnesses (Shigeaki Hinohara, Japanese MD, lifelong learning).
- Multi-lingual people have a similar 'bonus'.
- Continued physical activity keeps the body fit.
- Continued social activity prevents loneliness.
- Psychologists study why elderly people are as performing as younger ones (Von Tobel Prize 2012).



How governments can innovate

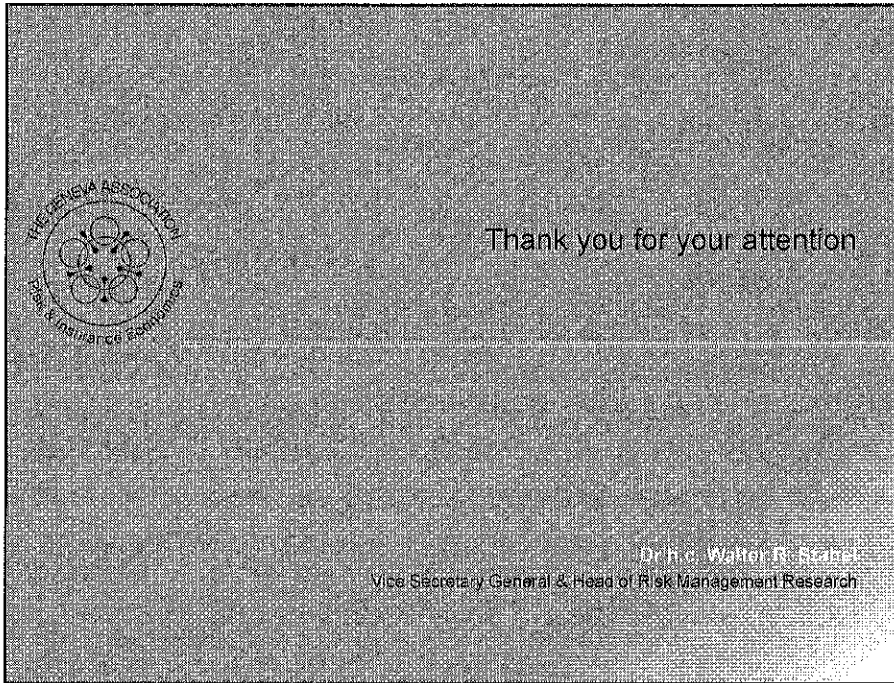
- ◆ The Swiss first pillar pension can be postponed for up to five years, with up to 35% increase,
- ◆ Payments into the Swiss second pillar can be continued until the age of 70,
- ◆ Not taxing labour reduces black labour (and the incentive to take early retirement to continue working in the black economy).
- ◆ The EU Court of Justice has condemned Hungary for early retiring justices (age discrimination).

PS. Switzerland has 2.7% unemployment and a high percentage of active Silver workers.

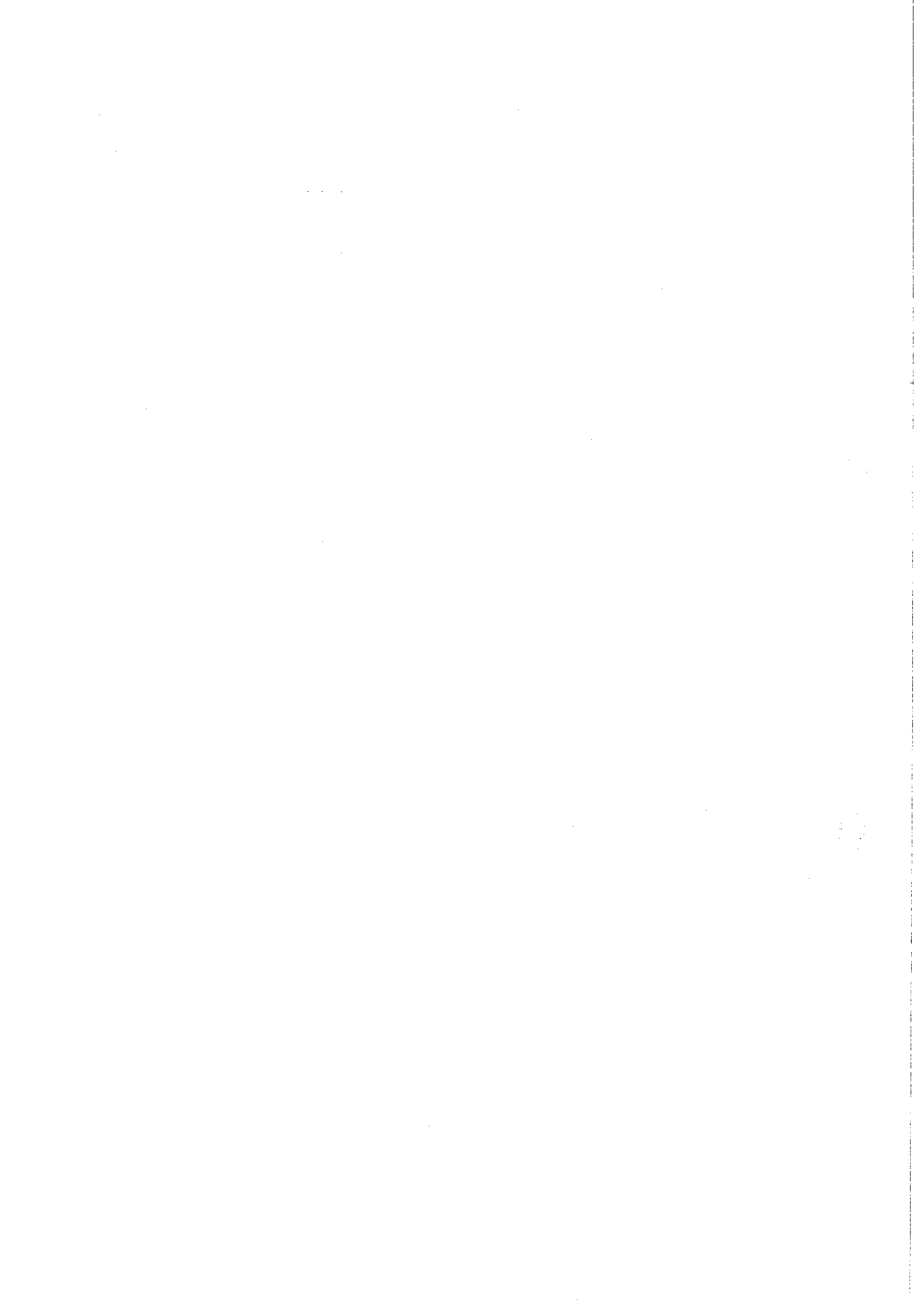


The Geneva Association

- ◆ "International Association for the Study of Insurance Economics"
- ◆ Founded in 1973 in Geneva, today formed by a maximum of 90 CEOs from the most important insurance companies in the world
- ◆ Think-tank for the global insurance industry, voice on insurance and risk management issues, and partner to international institutions
 - Research the growing importance of insurance activities world-wide in all sectors of the economy
 - Identify fundamental trends and strategic issues linked to insurance
 - Develop and encourage initiatives concerning the evolution - in economic and cultural terms - of insurance, risk management and the notion of uncertainty in the modern economy
 - Organisation, co-organisation and sponsoring of conferences, seminars and lectures
 - Publication of several newsletters, the Geneva Papers and special books/reports



Handwritten mark or signature.



Effective Employment Policies for Older Workers

Chris Ball

Outline of Presentation

- Ending cliff edge retirement – attitudes and values towards working later generally.
- The insurance industry workforce and the extent to which age management policies have been adopted.
- Sector Strategic initiatives.
- Developing alliances to strengthen four “silver workers” and fourth pillar approaches

Ending Cliff Edge Retirement



taen
Experts in Age
& Employment

Valuing the older worker



Nick Page (63)

Former pilot, fit, wanted to work after forced retirement.

Applied, passed exams, trained

Accepted into Las Vegas Police service

Loves the job

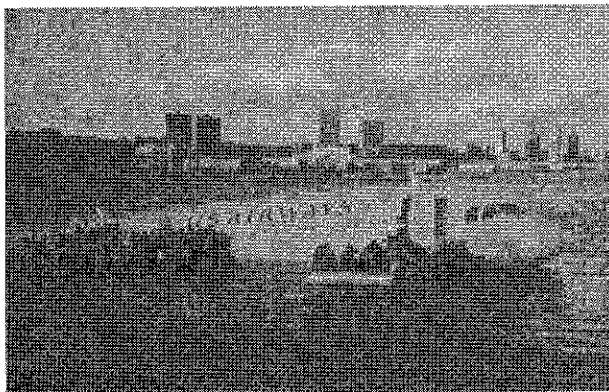
taen
Experts in Age
& Employment

What will my employer lose if I move on?

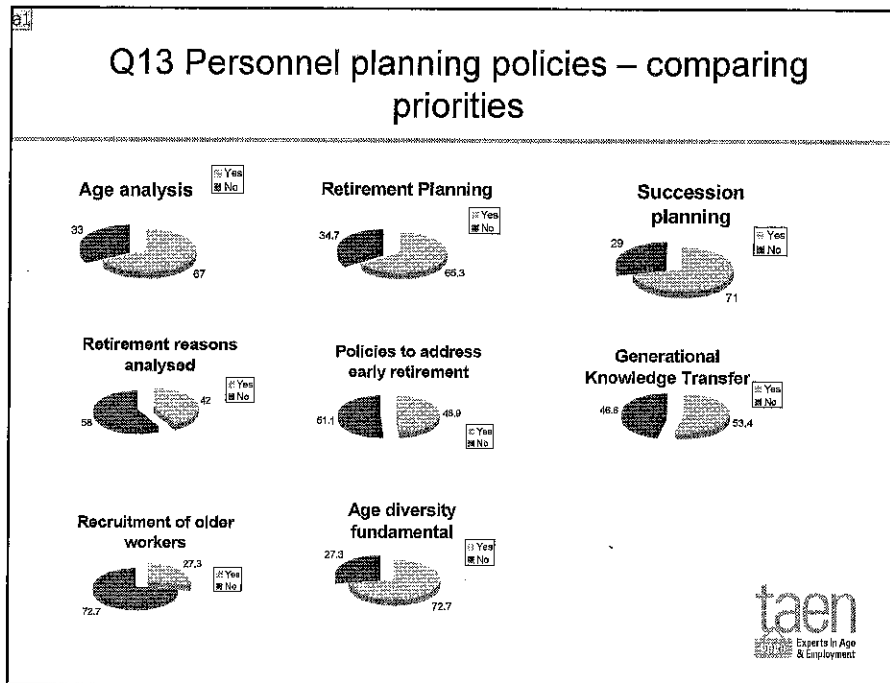
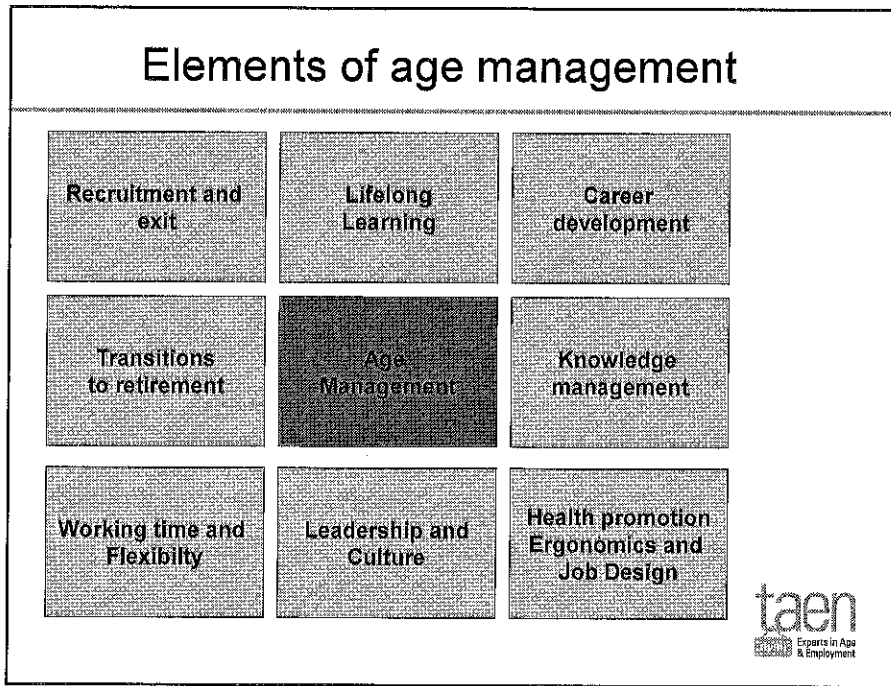
- My experience/ knowledge/commitment to the job
- My skills and ability to teach others
- My knowledge and contacts with people and clients who know and value me
- My values, sense of what is "right" and "wrong," moral purpose, sense of duty
- My leadership in the team I work in

taen
Experts in Age
& Employment

Captain Chesley Sullenberger (57)



taen
Experts in Age
& Employment



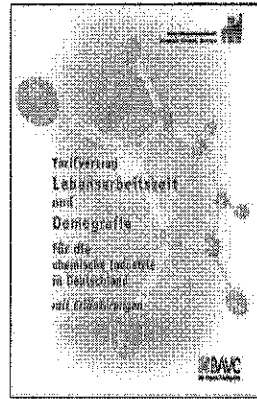
213

Slide 8

- a1 It is a very good idea to have a comparison here!!!!; let's think how to visualise it. There must be an even better way.
abuecker, 04/03/2012

Collective agreement in German chemicals industry

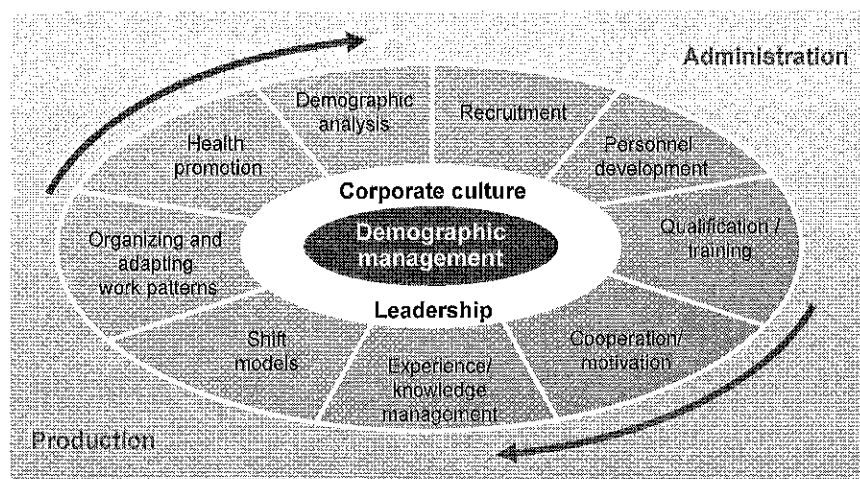
- "Working life and demographic change"
- Put in place policies for sustainable staffing
- Support for extension of working life



taen
Experts in Age & Employment

The future management of demographic change will have implications for all areas of the organization

BASF
The Chemical Company



16

12/5/2012

2/5

Combining Work and Fitness



- How easy to combine exercise with work?
- How far do employers help workers prioritise fitness?
- Some good examples but many where work makes people ill.

taen
Experts In Age
& Employment

Work, fitness – peaking at 85!



taen
Experts In Age
& Employment

Helsinki Building Department

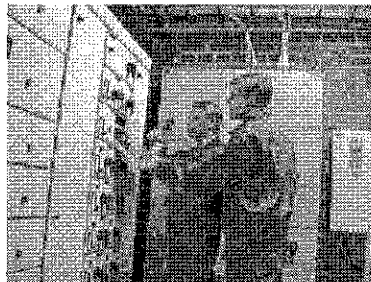


- Worker promises to follow healthy lifestyle
- Employer offers improved health checks, medical care, support for gym/sport
- Excessive social drinking, smoking discouraged.
- Regular meetings with occupational health physician
- Retirement ages rising, sickness declining

taen
Experts In Age
& Employment

Retaining skills and know-how of older workers: Finnish example

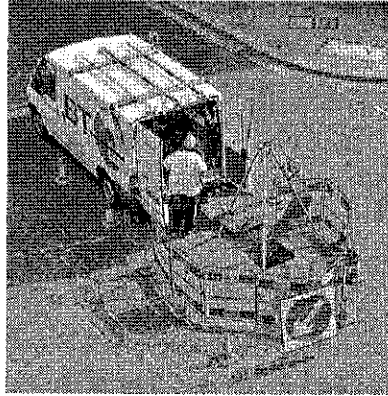
- 2005, 200 workers out of 840 expected to retire by 2009.
- programme to raise age of quitting.
- 'We could never find trained replacements, so we decided to try to delay retirements by two to four years. Our target now is an average retirement age of 62.'



taen
Experts In Age
& Employment

BT Work "what you do, not where you go"

- 14,500 work from home, 75,000 work flexibly in some way
- Part time, compressed hours, job share...
- "Flex working helpful to older worker"
- Programmes include, Wind Down, Step Down, Time Out (sabbaticals for <2yrs), Ease Down
- Achieving the Balance web site
- Dedicated site for home workers



taen
Experts in Age
& Employment



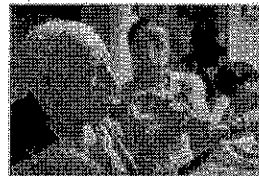
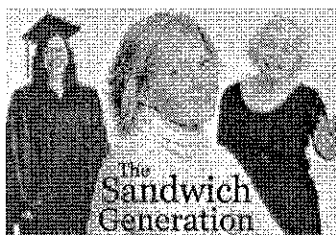


BMW

- Employees: 69,518; Percentage over 50: 23.1%
- "Today for Tomorrow," - a holistic and cross-cutting approach to addressing demographic change at the workplace.
- Innovative initiatives in health promotion, training and knowledge management, work environment, and personalized retirement models.
- Targeted unemployed older job seekers to get a well-balanced age structure to support the regional labor market in new plant.
- New assembly hall designed to support healthy aging of its workforce.



Work, Care and Older Workers



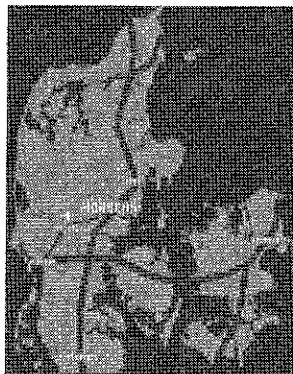
The Good Working Life Project

2000, "The Good Working Life," project initiated with local authorities association KL and public sector union FTF.

Aim – motivate teachers to stay employed instead of taking early retirement.

Survey showed that only a few teachers intended to stay till 65.

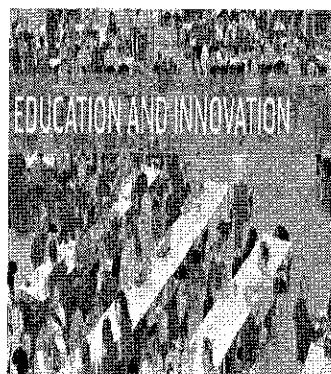
Survey showed that changing work content, reducing working hours and other initiatives would have an impact on intentions to stay



taen
Experts in Age
& Employment

Lifelong Learning and Training

- Many primary schools offer 50+ teachers special refresher course, to combine theory with practice and learn about new trends/research
- Management hopes teachers following course will be more committed to continue working.
- Teachers relieved of duties whilst on 7week course. Course - organised by municipality, FTF and Danish School of Education.



taen
Experts in Age
& Employment

Dealing with Stress and Burnout

- Survey showed much stress and burn out.
- Now many teachers are sent on 2 week course, "educated and guided" in how to handle difficult children with behavioural problems or difficulties adjusting to their environment.
- Free consultations with psychologist offered all teachers under pressure.



Flexible work arrangements

- Difficulty in recruiting; high turn over
- Over past 6 years municipality worked hard to improve working environment for teachers.
- Those with reduced work capacity given "light duties" in flex job. Flex job has supplement (up to 2/3 normal pay) to boost pay to normal level.
- Hence teachers with disability or illness not excluded from labour market.
- Special allowance awarded to 62+ teachers as incentive to stay.
- For 60+ teachers, hours reduced by 175 yearly.

