Annuities in Switzerland: Price Controls and Little Individual Choice

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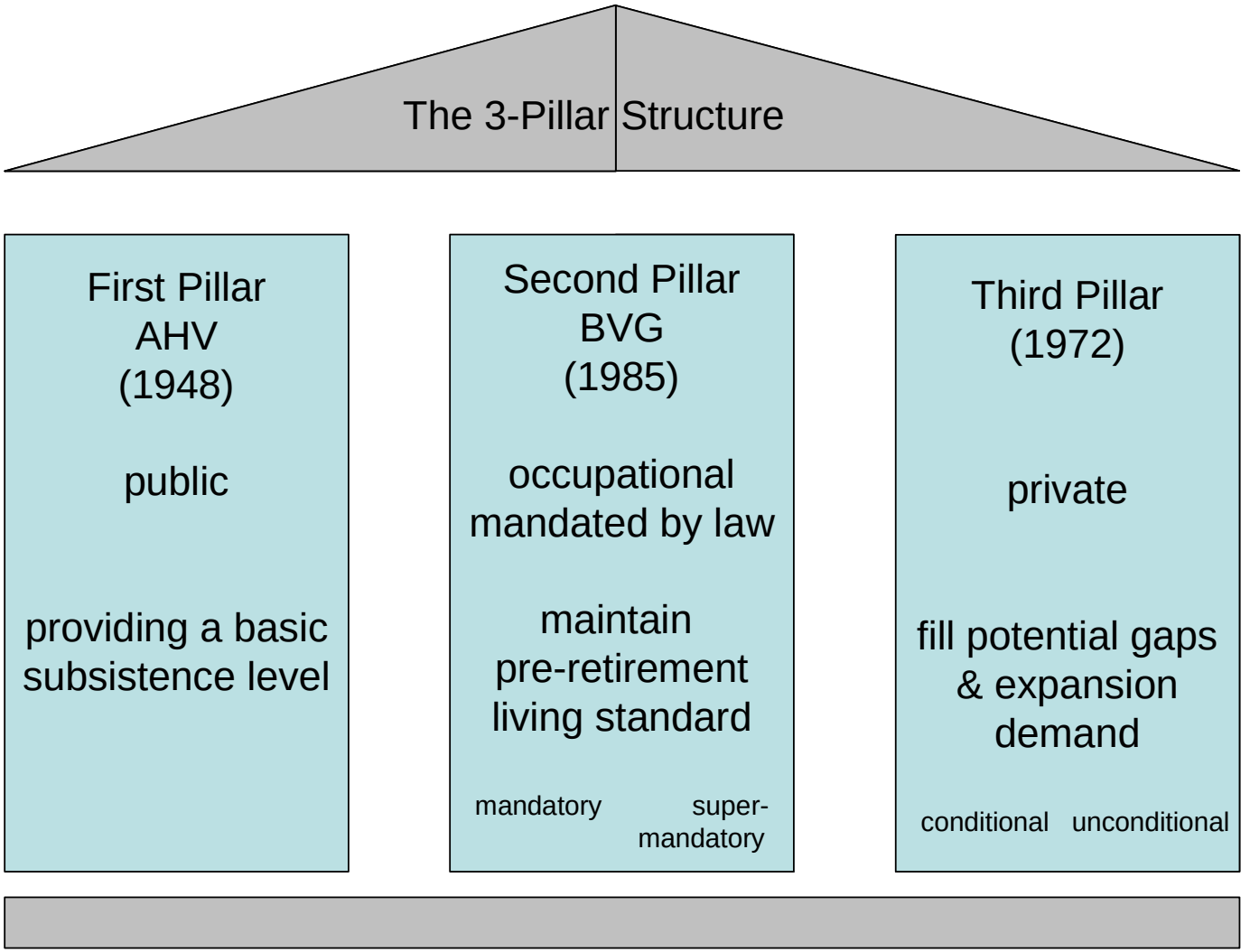
Agenda

- The 3-Pillar Swiss Pension System
- The 2nd Pillar
- Stylized Facts
- Conclusion

The 3-Pillar Swiss Pension System

Overview: The 3-Pillar Structure



Organization: The First Pillar

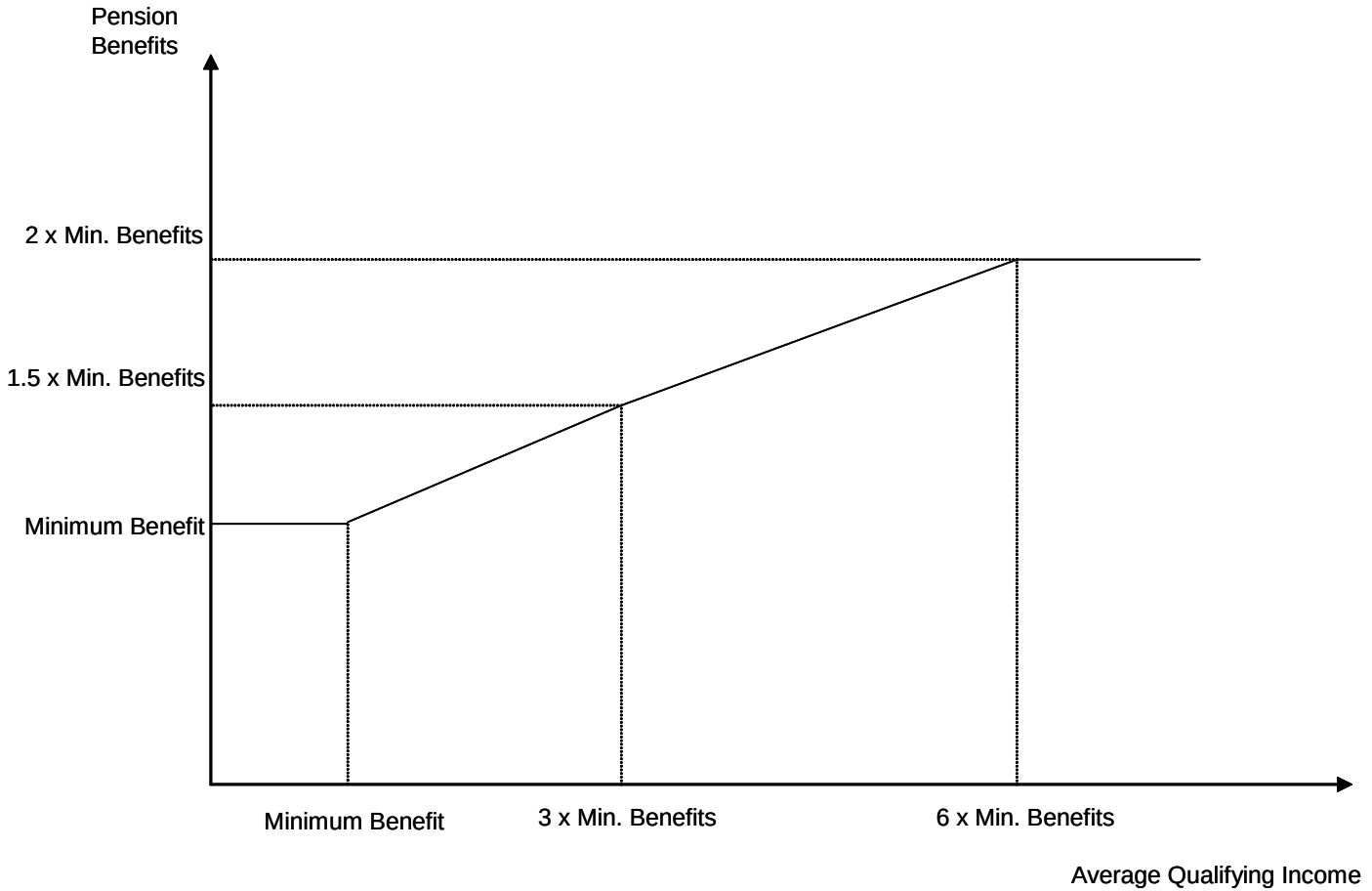
- Pay-as-you-go system
- Financed with a proportional payroll tax on labor income
- Earmarked fraction of the value added tax on consumption
- Married couples' entitlements are capped at 150 percent of a single benefit

AHV: Contribution Rates and Benefits since 1948

Year	Single Benefits (current prices (cp))		Old-age Benefits (cp) average	Contribution Rates (as % of wage)	
	Minimum	Maximum	(Women & Men)	Employees	Self-employed
1948	40	125		4.0%	4.0%
1957	75	155		4.0%	4.0%
1967	138	294		4.0%	4.0%
1977	525	1'050		8.4%	7.3%
1988	750	1'500	1'201	8.4%	7.8%
1997	995	1'990	1'670	8.4%	7.8%
2007	1'105	2'210	1'755	8.4%	7.8%

Contribution – Benefit Linkage

First pillar AHV benefits as a function of qualifying average income



Organization: The Second Pillar

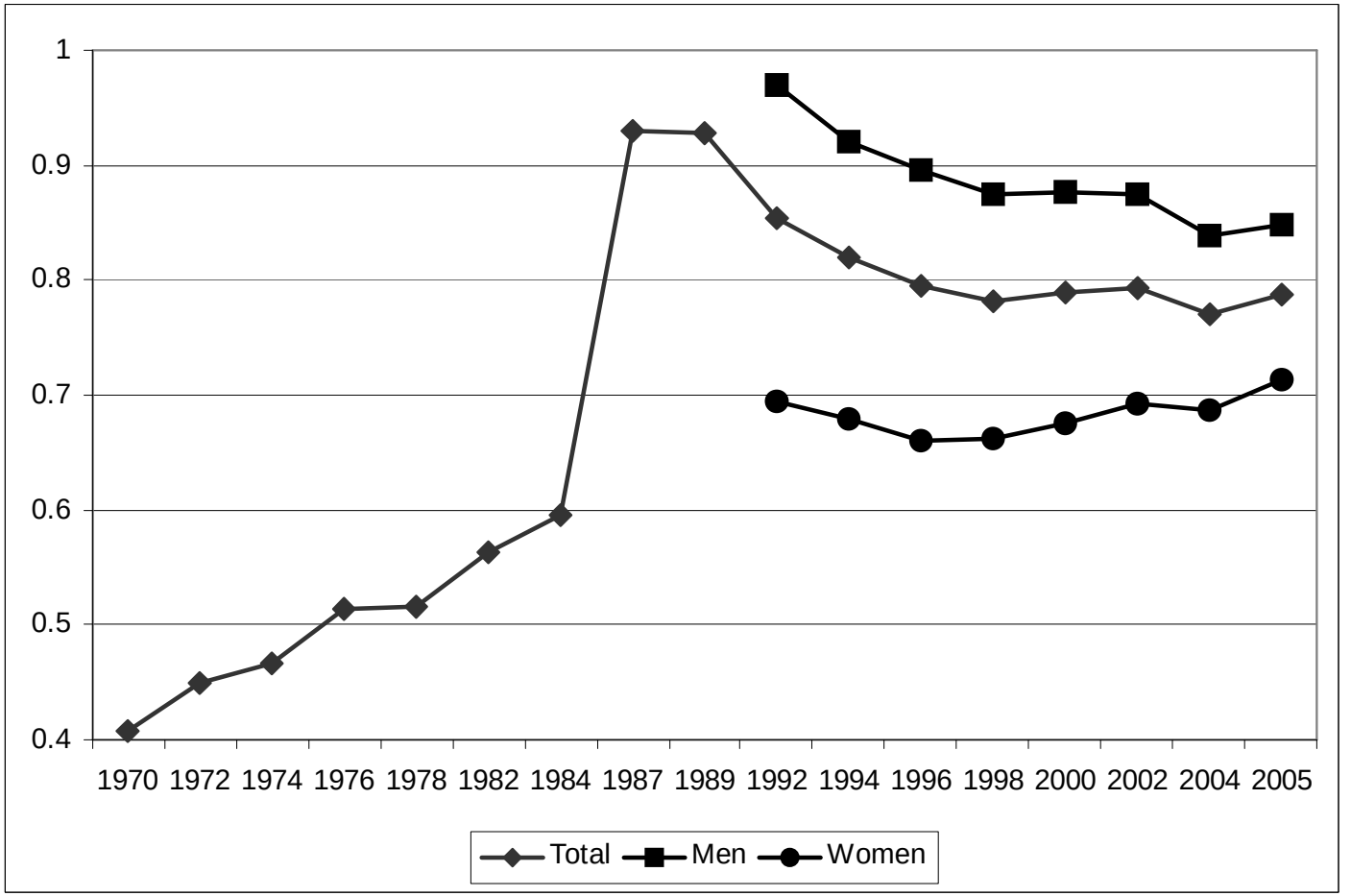
- Employers organize occupational pension plans (DB or DC schemes)
- Target replacement rate of 50-70%
- Insurance provision for *disability* and *survivors*
- Fully funded
- Accrued capital is fully portable
- Accumulated retirement assets bear an interest rate
- Benefits as monthly life-long *fixed nominal (joint) annuity* or as lump sum

Total Minimal Contribution Rates under BVG law

Age	Contribution Rates
25-34	7%
35-44	10%
45-54	15%
55-65	18%

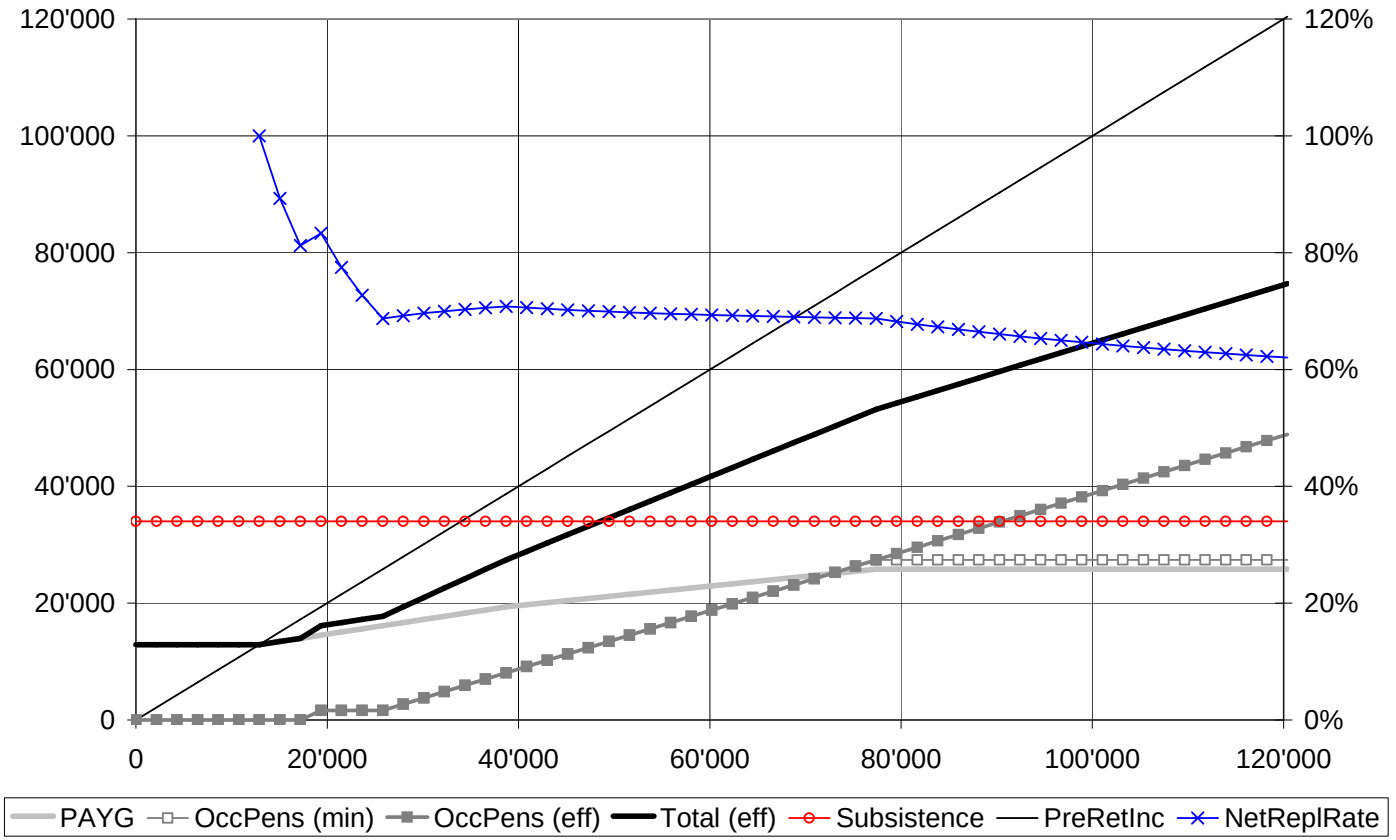
Coverage Rates in the Second Pillar

Workers Covered by an occupational Pension Plan since 1970



Benefits and Income

Combined Pension Benefits as a Function of Income



Size of the different Pillars

Revenues, Expenditures and GDP (in millions) since 2000

AHV Year	Total Revenues	Total Expenditures	GDP nominal	Expenditures as % of GDP	Total Recipients
2000	28'792	27'722	422'063	6.57%	1'515'954
2002	28'903	29'095	434'258	6.70%	1'547'930
2004	32'387	30'423	451'379	6.74%	1'631'969
2005	33'712	31'327	463'673	6.76%	1'684'745
2006	34'390	31'682	486'178	6.52%	1'701'070

AHV BVG	Total Revenues	Total Expenditures	GDP nominal	Expenditures as % of GDP	Total Recipients[a]
2000	28'211	20'202	422'063	4.79%	755'835
2002	31'330	21'652	434'258	4.99%	806'305
2004	34'127	23'751	451'379	5.26%	880'923
2005	36'610	24'600	463'673	5.31%	899'425
2006	n.a.	n.a.	486'178	n.a.	n.a.

[a] Annuities and Capital; without Annuities from Welfare Funds

The Second Pillar in Detail

Regulatory Issues

Within the Swiss occupational pension pillar the accumulation and decumulation phase are usually organized by the same institution (fund, insurance). Both are highly regulated:

- Contribution Rates
- Pay-out Options
- Minimum Interest Rate Requirements
- Conversion Factor
- Capital Requirements
- Investment Structure
- Transparency Issues
- Organization, Administration and Supervision

whereas, there is little regulation on Asset– and Liability Management

Minimum Interest Rate

This rate specifies the minimum rate of return that has to be credited by law on the accumulated pension capital during the *accumulation period*

It is periodically reassessed by the Swiss Federal Council

Evolution BVG Minimum Interest Rate

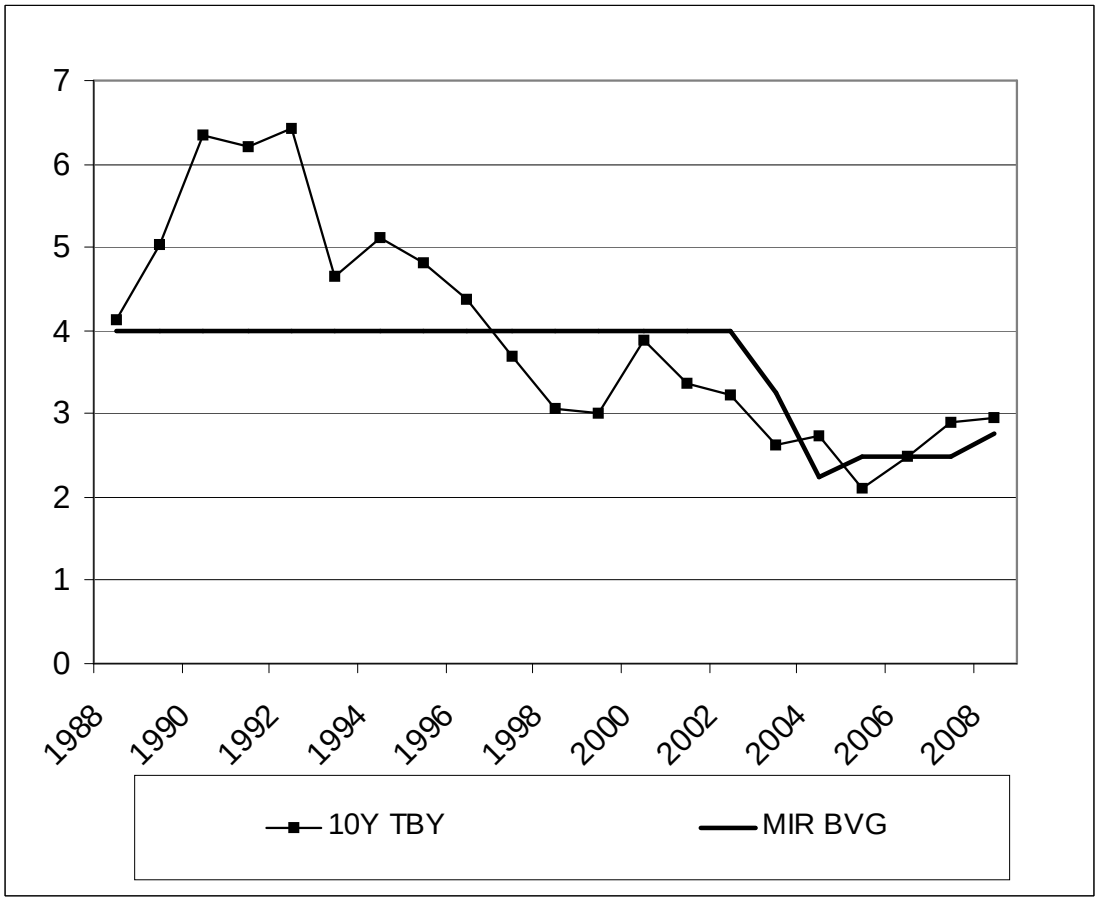
	1985 - 2002	2003	2004	2005 -2007	2008
Min. Interest Rate	4%	3.25%	2.25%	2.5%	2.75%

... it was constant for a very long time, ... but it is now generally agreed that:

- it should reflect market conditions from a relatively risk–averse perspective
- it should be linked in some way to the risk–free rate of return on financial assets

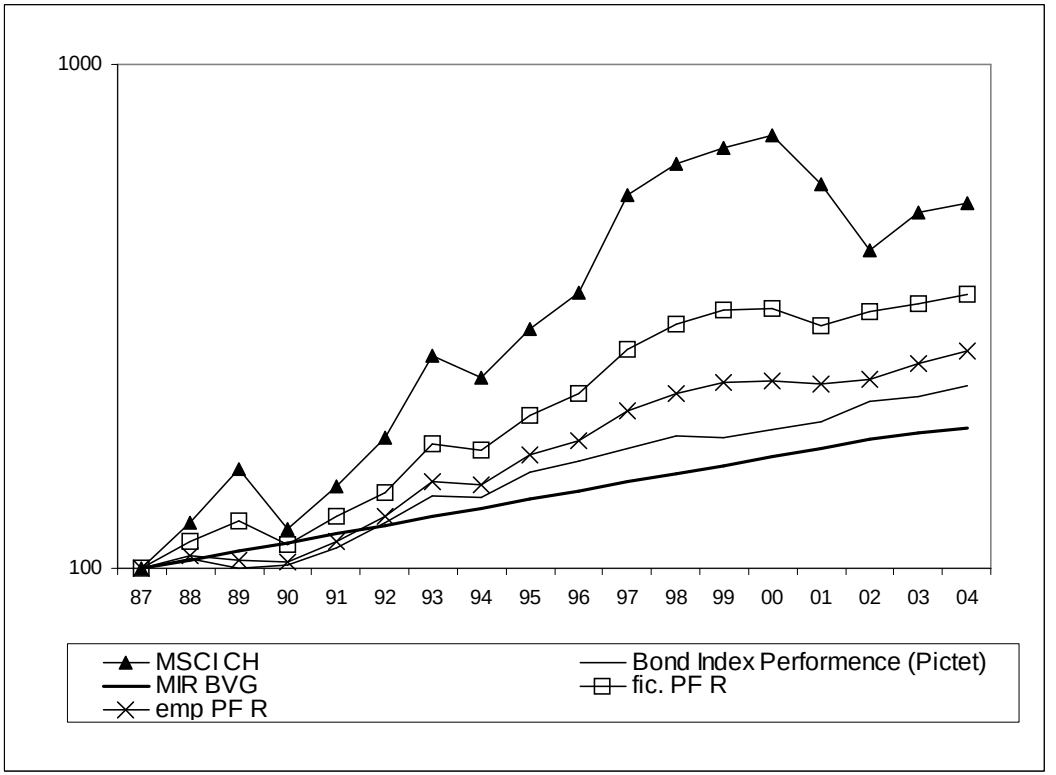
Minimum Interest Rate and Risk–Free Market Returns

Market Returns on Risky and Risk–Free Assets



Minimum Interest Rate and Market Returns

Cumulated Returns (in logs)



As portfolios of pension funds may also take advantage of potentially higher returns in stock markets by including risky assets.

Annuities and the Annuity Conversion Factor

The accumulated capital K is translated into a yearly pension B using the conversion factor γ: $\boxed{B = \gamma K}$

Year	Birth Y. Women	RA Women	Women γ- BVG	Men γ -BVG	Women (lowest)	Men (lowest)
$\leq$ 2004	$\leq$ 1942	62	7.20%	7.20%	5.454% (62)	5.835%
2005		(64)	(7.20%)	7.15%	5.454% (62) / 5.718% (64)	5.835%
2006	1943	63 (64)	7.15%	7.10%		
2007	1943	64	7.20%	7.10%		
2008	1944	64	7.10%	7.05%		
2009	1945	64	7.00%	7.05%		
2010	1946	64	6.95%	7.00%		
2011	1947	64	6.90%	6.95%		
2012	1948	64	6.85%	6.90%		
2013	1949	64	6.80%	6.85%		
$\geq$ 2014	$\geq$ 1950	64	6.80%	6.80%		

Facts about the Annuity Conversion Factor

- The conversion factor is *directly regulated*, that is not by means of a regulated technical discount rate and prescribed mortality tables
- The conversion factor is *uniform*, regardless of marital status, gender or income (at least in the mandatory part)

- A pension fund can apply a lower rate than the legal conversion factor under certain conditions (which is not an option for insurance companies)
- Pension funds are free to apply any other conversion rate to the super-mandatory part of the retirement savings
- There are no rules for the adjustment of the conversion factor for early retirement benefits in the BVG law

Changes in the two most important Regulated Factors

Changes in the annuity conversion factor can:

- substantially reduce anticipated benefits of workers
- but do not affect people within 5 years of retirement
- If the conversion factor does not correspond correctly to estimated mortality tables and market returns, the provider faces a considerable shortfall risk

Changes in the minimum interest rate:

- affect the level of retirement capital directly
- If the minimum requirement is set too high, portfolio managers have to take excessive risks, for higher expected returns are only attainable with a riskier portfolio.

Stylized Facts

Combined Replacement Rates

Average Pensions First Pillar and Average Replacement Ratios of Households

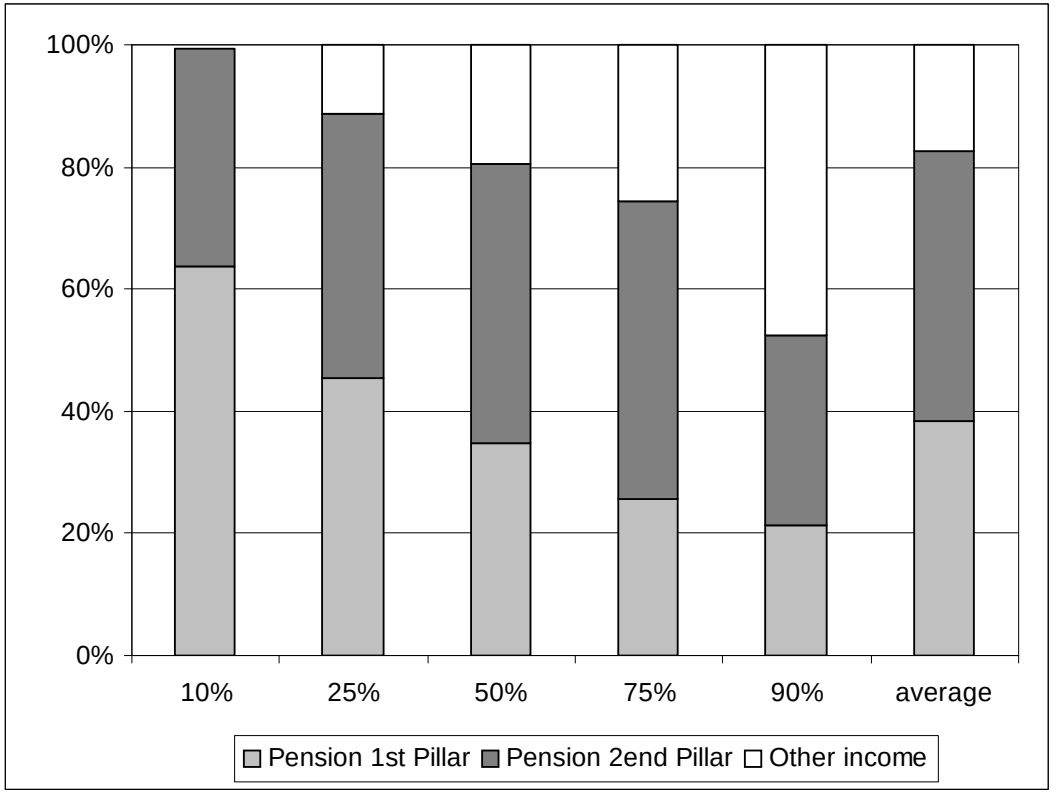
Retirees AHV/IV	1990	1998	2000	2004
Total average monthly income households (CHF)	4'124	6'070	5'761	5722
Average monthly pension payments AHV (CHF)	1'737	2'301	2'313	2408
Average replacement rate	42%	38%	40%	42%

Combined I. and II. Pillar Replacement Rates

Before retirement									
Gross income	50			100			200		
Marital status	sing	marr	m+2	sing	marr	m+2	sing	marr	m+2
Net income	41	42	44	73	77	80	135	143	147
Replacement rates									
Gross	0.65	0.85	1.07	0.63	0.75	0.98	0.56	0.63	0.84
Net	0.75	0.95	1.18	0.75	0.88	1.11	0.71	0.78	0.98

and graphically ...

Replacement Ratios as a Function of Income: 1st and 2end Pillar



Note: Only individuals that were aged between 65 years and 70 years in 2002 are considered. The average monthly incomes per percentile are 2'947, 5'155, 7'521, 9'962, 13'263 with an average of 5'765 CHF.

Annuities

Switzerland still has a very high annuitization rate within the second pillar (only approximately 20% of the accumulated capital is withdrawn as a lump sum): Why?

- Due to the close link between the accumulation and decumulation phase $\longrightarrow$ high conversion rates compensate individuals for lower (than market) accruals during the contribution period
- For historical reasons: privately run occupational systems before the mandate were almost exclusively annuity based
- Restrictions on lump–sum payments imposed by the sponsor (NOT by the government!)

Given the size of the second pillar and the high effective replacement rates in old age, it is not surprising that there is little demand for an annuity market in the strict sense of a market. Market annuities make up less than a percent of pension volume.

Money's Worth Ratios

Money's Worth Ratios for Different Discount Rates since 2000

Year	annuitant	SNB Yield Curve	5-year-bond rate	5-year-bond MWR	fixed 3.5%
2000	female single	1.069	3.80%	1.117	1.155
	male single	0.890		0.917	0.943
	male married	1.025		1.068	1.103
2002	female single	1.151	2.73%	1.275	1.165
	male single	0.953		1.023	0.951
	male married	1.102		1.212	1.112
2004	female single	1.206	2.36%	1.346	1.175
	male single	0.991		1.071	0.959
	male married	1.152		1.276	1.120
2005*	male single	1.099	1.42%	1.186	0.963
	male married	1.302		1.440	1.124
2005	female single (62), 5.454%	1.039	1.42%	1.076	0.893
	male single, 5.835%	0.891		0.961	0.780
	male married, 5.835%	1.055		1.167	0.911

MWR calculations for pooled gender survival tables

The Recent Reform

Projected Money's Worth Ratios

Year	sex	R.A.	C.F.	single female		single male		joint (F=61.3)	
				FIF	(SFSO)	FIF	(SFSO)	FIF	(SFSO)
2004	F	62	0.0720	1.175	(1.191)				
	M	65	0.0720			0.959	(0.904)	1.120	(1.104)
2005*	M	65	0.0715			0.952	(0.902)	1.117	(1.110)
2006	F	63	0.0715	1.148	(1.153)				
	M	65	0.0710			0.953	(0.899)	1.113	(1.096)
2007**	F	64	0.0720	1.133	(1.144)				
	M	65	0.0710			0.957	(0.904)	1.117	(1.100)
2010	F	64	0.0695	1.107	(1.116)				
	M	65	0.0700			0.955	(0.903)	1.112	(1.096)
2014	F	64	0.0680	1.098	(1.108)				
	M	65	0.0680			0.941	(0.892)	1.095	(1.079)

MWR calculations for pooled gender survival tables, updated by improvement rates and at a constant nominal interest rate of 3.5%

Marital Status

Money's Worth Ratios as a Function of Marital Status

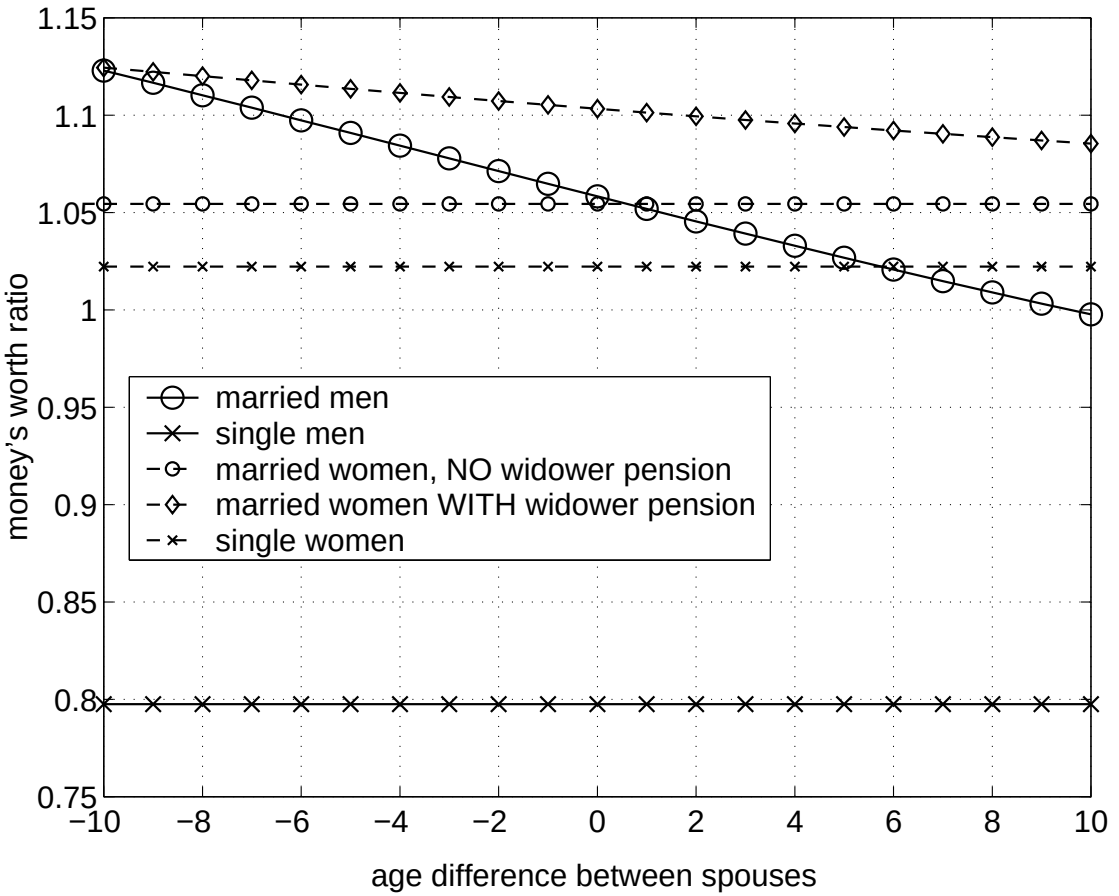
Year 2004	Gender	Ret. Age	C.F. γ	FIF	SFSO pooled	SFSO marital
	female pooled	62	0.0720	1.175	1.191	
	female married	62 (65.7)	0.0720			1.210
	female married	62 (—)[a]	0.0720			1.171
	female single	62	0.0720			1.143
	female divorced	62	0.0720			1.108
	female widowed	62	0.0720			1.139
	male married	65 (61.3)	0.0720	1.120	1.104	1.093
	male married	65 (55)	0.0720			1.148
	male married	65 (—)[a]	0.0720			0.896
	male single	65	0.0720	0.959	0.904	0.805
	male divorced	65	0.0720			0.796
	male widowed	65	0.0720			0.809

MWR calculations based on a constant nominal interest rate of 3.5%

[a] Without Survivor benefits

Gender and Age

Money's Worth Ratios as a Function of Gender and Age



The figure is drawn for a retirement age of 62 and a discount rate of 4%

Financial Situation of Pension Funds

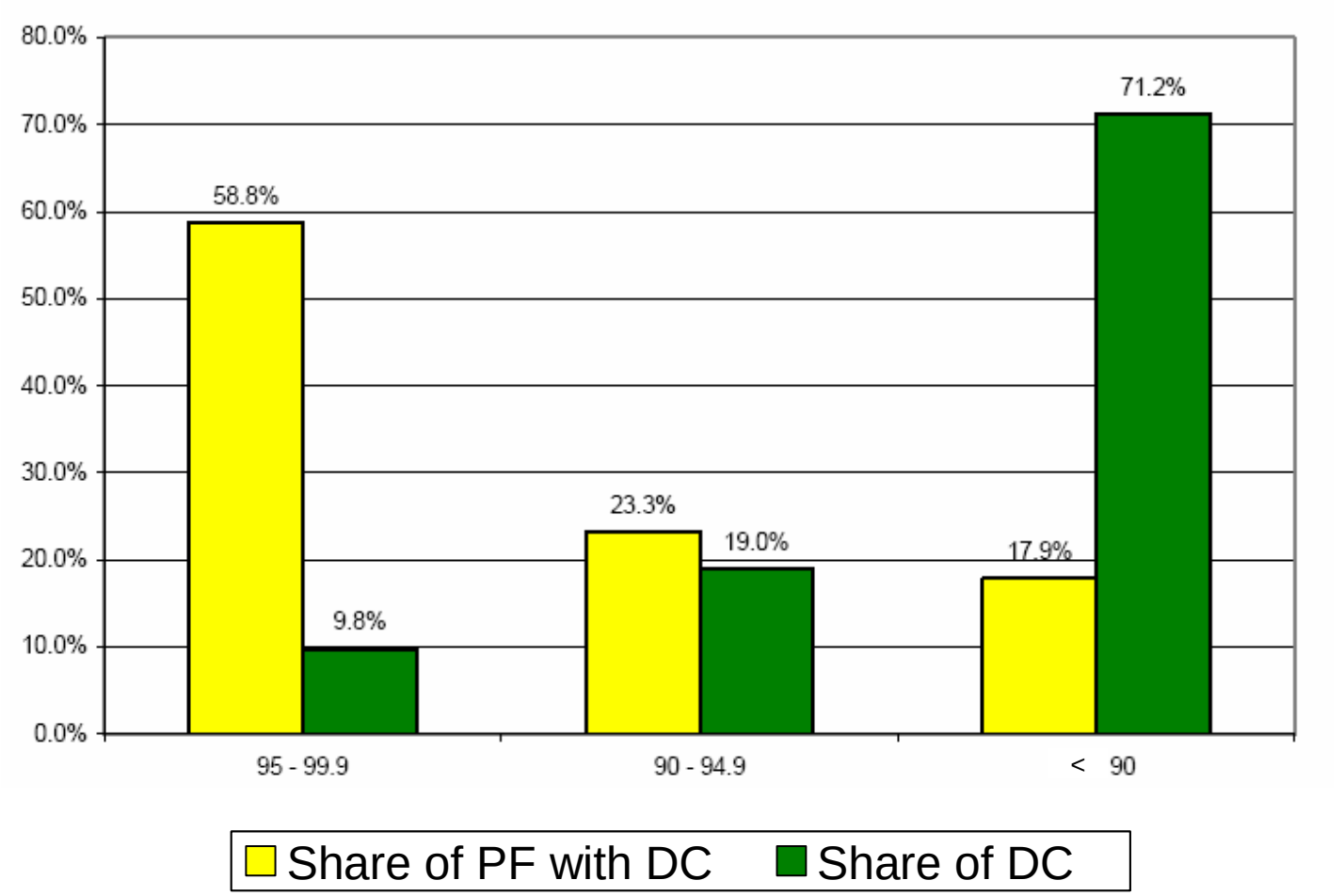
Extent of Underfunding

Pension Funds	2001	2002	2003	2004
Registered PF:				
PF without public warranty	9.1%	29.2%	15.6%	12.6%
PF with public warranty	29.3%	50.0%	56.3%	62.2%
Total registered	9.7%	29.8%	17.0%	14.4%
Total Pension Funds with underfunding	6.5%	19.8%	11.2%	10.1%

without "Collective–Institutions"

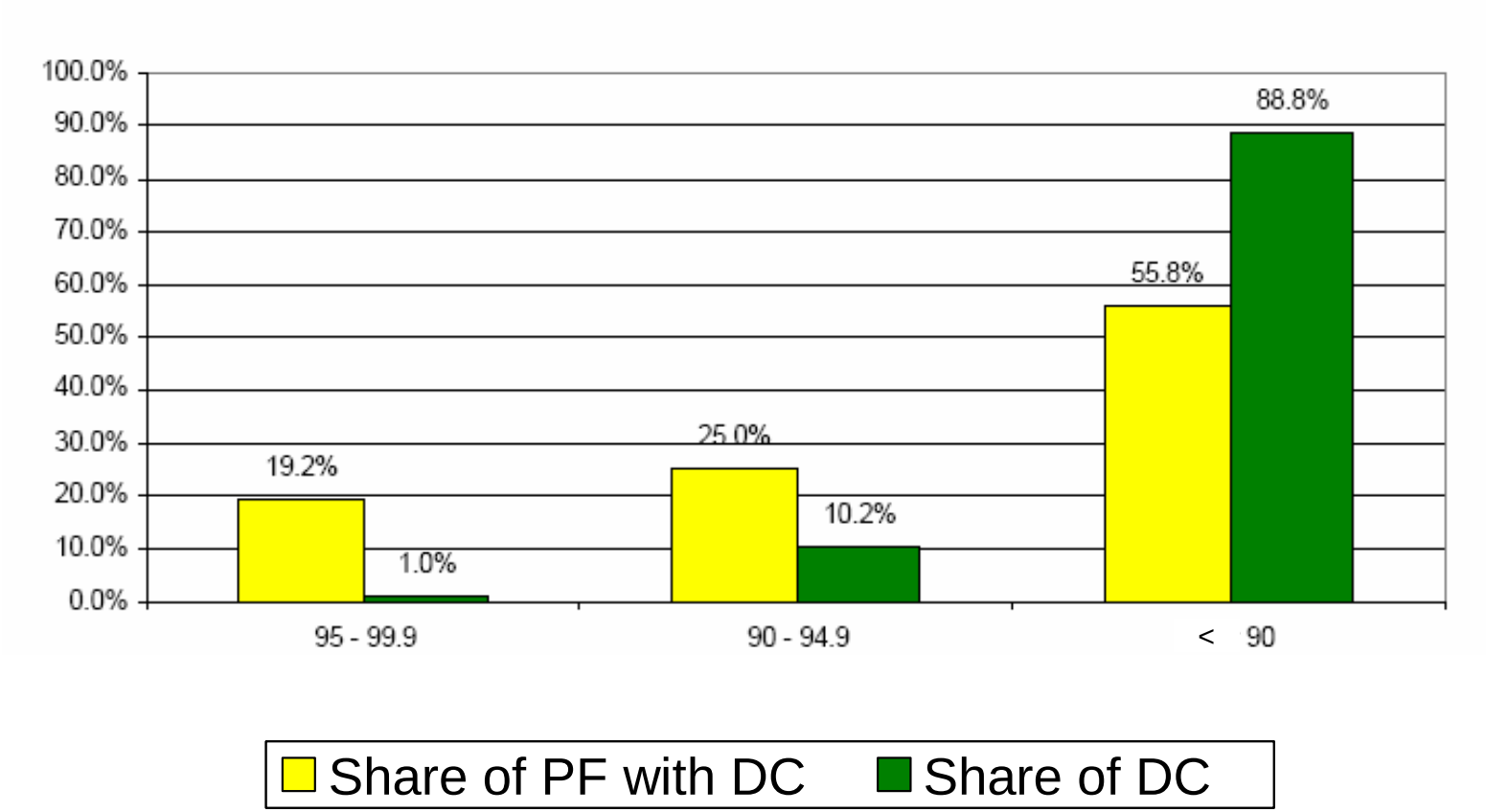
Distribution of Pension Funds with Deficient Cover

Pension Funds without public Warranty (2004)



Distribution of Pension Funds with Deficient Cover

Pension Funds with public Warranty (2004) (cont.)



Conclusion

The Impact of Price Controls

- MWRs in the Swiss second pillar are very high, exceeding one for women and married men even at a relatively high discount rate of 3.5%
- There is thus considerable pressure on pension funds and insurance companies to lower the conversion factor
- Many autonomous funds have indeed already started to use lower conversion factors
- Uniform conversion factors redistribute resources remarkably $\longrightarrow$ the main losers are single men, the main beneficiaries married men with a younger spouse and young children late in life $\longrightarrow$ could impose (theoretically) an adverse selection problem on pension funds

The Impact of Price Controls (cont.)

- Insurance companies, which are crucial to the system functioning well, are starting to lose interest in participating in the annuity market, because the mandated mandatory obligations are more difficult to meet presently
- A stable conversion factor avoids large swings in benefits, caused by fluctuations in the market interest rate, however to keep the system financially stable, the goal of future reforms of the BVG/LPP should be to base the conversion rate on demographic parameters and medium– or long–run market conditions (discounting)
- It also has to be discussed, whether a uniform conversion factor (and the implied redistribution) should be maintained

The Impact of Price Controls (cont.)

Price controls can be effective in avoiding annuity rate risks ... but if the rules are not adjusted to market conditions and demographic changes in some standardized way, they will become an easy mark for politicians and may thus threaten the viability of pension funds and the equitable treatment of different generations.

Thanks