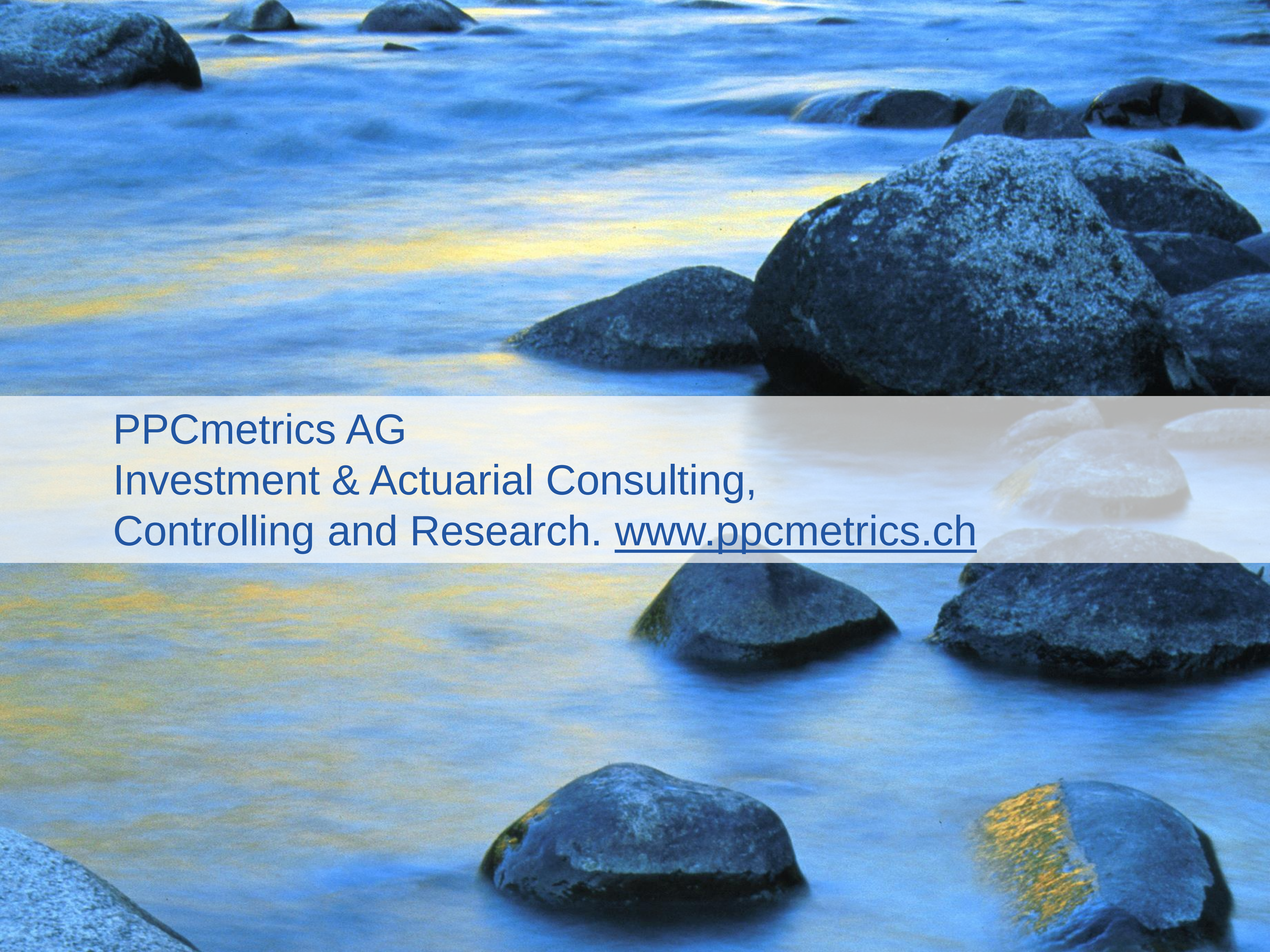


PPCmetrics AG
Investment & Actuarial Consulting,
Controlling and Research. www.ppcmetrics.ch

Investment Consulting

EPFIF

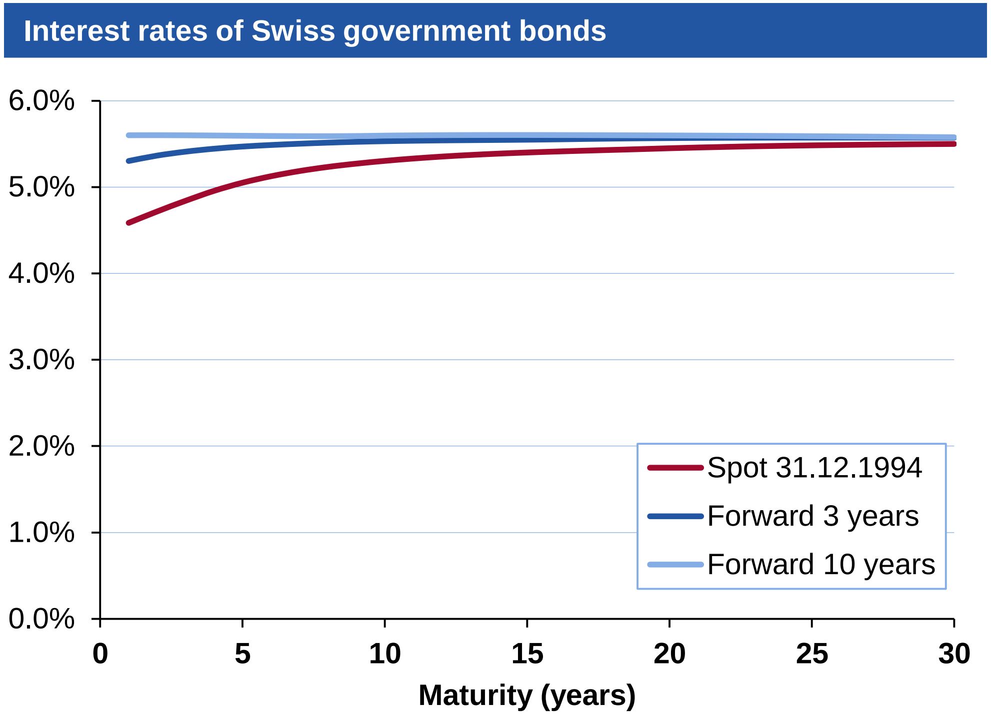
Coping with Negative Interest Rates – Swiss Pension Funds' Perspective

PPCmetrics AG
Dr. Stephan Skaanes, CFA, Partner

Stockholm, August 25, 2016

Swiss Three-Pillars System

Swiss pension funds in 1994

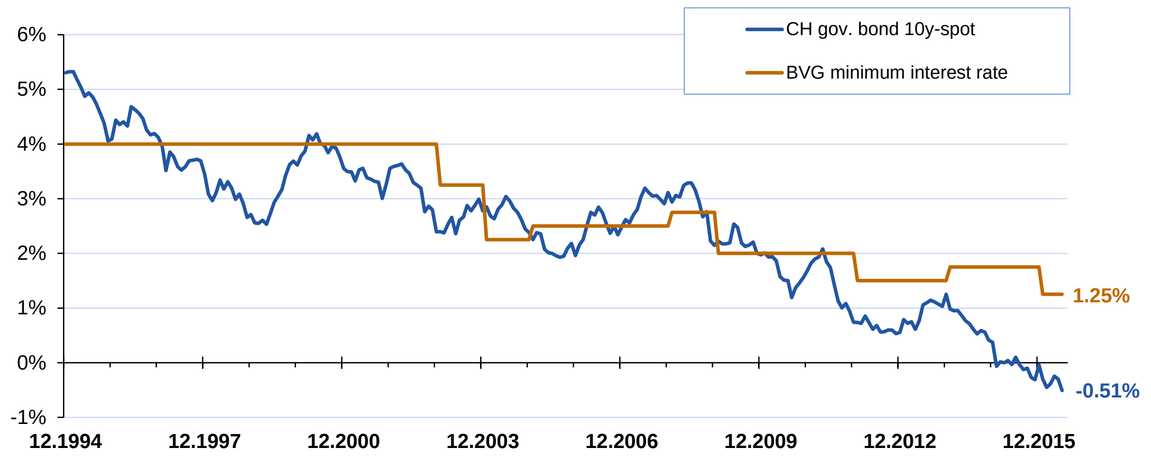


- Riskless interest rate above 5%
- Inflation over 5 - 10 years around 1%
- Technical interest rate around 4%

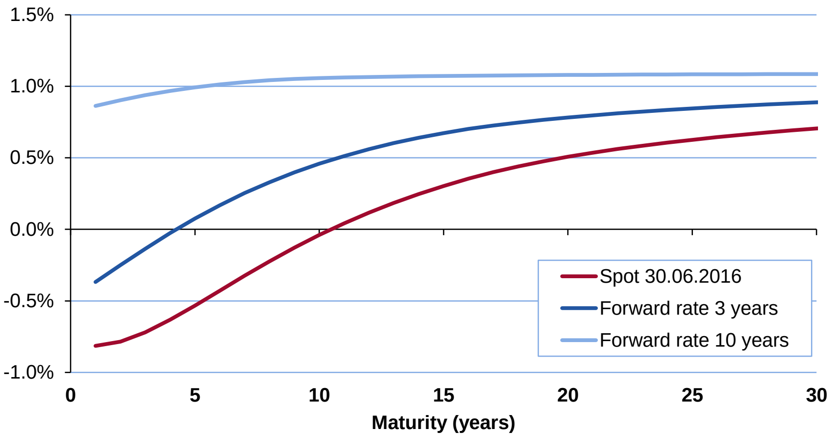
- Financing of technical interest rate (technical discount rate) without any difficulty!

Interest rate development and yield curve today

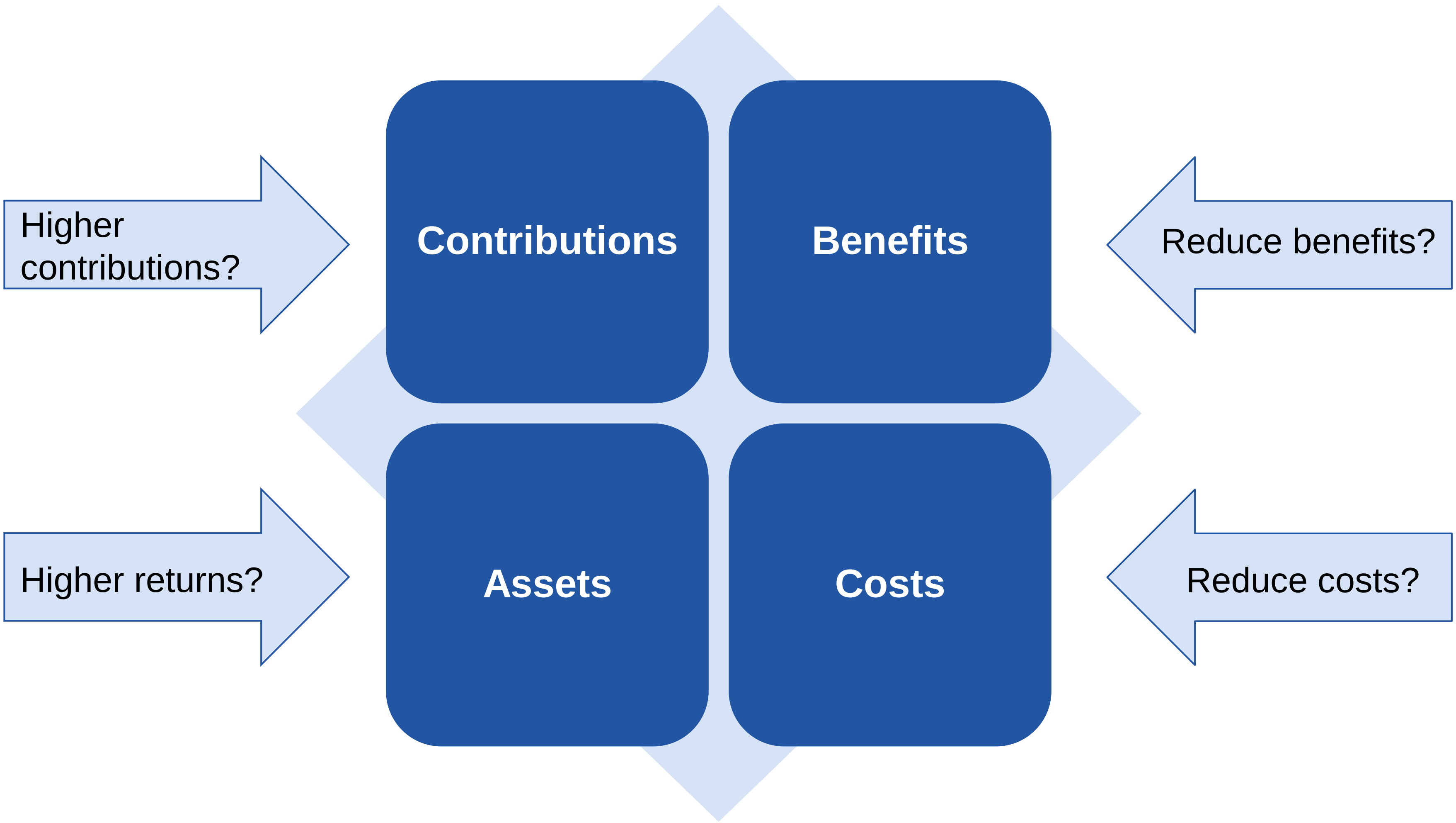
Evolution of interest rates



Selected yield curve with forward rates



How to finance in the long run?



Possible solutions on the asset side

- New risk premiums
- “Smart” Indexing / “Smart” Beta / Factor Investing
- “Wait”
- Increase investment risk
- Cost reduction

New risk premiums

- **Alternative investments/satellite investments** provide an opportunity to get **access to new risk premiums**.
- But an investor has to investigate each new investment carefully:
  - **Existence of risk premium**
  - **Implementation risk**
  - **Transparency**
  - **Liquidity**
  - **Diversification**
  - **Costs**

New risk premiums
Overview

	Global Real Estate (unlisted)	Private Equity	Insurance Linked Bonds	Commodities	Infrastructure	High Yield Bonds	Senior Secured Loans (Bank Loans)	Global Real Estate (listed)	Hedge Funds	Timber	Private Debt (Direct Loans)	Microfinance	Gold
Risk premium	🟢	🟢	🟢	🔴	🟠/🟢	🟠	🟠/🟢	🟠	🔴	🟠/🟢	🟠	🟠	🔴
Implementation risk	🟠	🟠	🟠	🟠/🟢	🔴	🟢	🟠	🟢	🔴	🔴	🔴	🟠	🟢
Transparency	🟠	🟠	🟠	🟢	🟠	🟢	🟠	🟢	🟠	🟠	🔴	🟠	🟢
Liquidity	🔴	🔴	🔴	🟢	🔴	🟠	🟠	🟠/🟢	🟠	🔴	🔴	🔴	🟢
Diversification	🟠	🟠	🟠	🟠/🟢	🟢	🔴	🟠	🔴	🟠	🟠	🟠	🟠	🔴
Costs	🔴/🟠	🔴	🔴	🟢	🔴	🟠	🟠	🔴/🟠	🔴	🟠	🔴	🔴	🟢

(🟢) Entire fulfilment of the criterion
(🟠) Average fulfilment of the criterion
(🔴) Below average fulfilment of the criterion

New risk premiums
Performance

There exists a big **heterogeneity** between alternative investments.

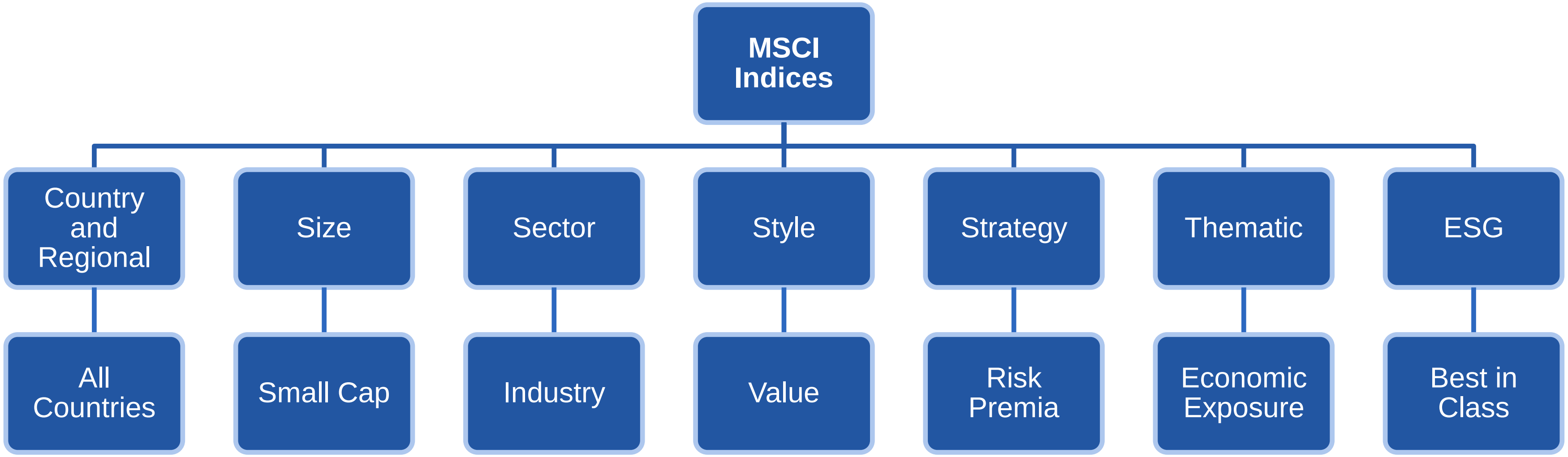
New risk premiums
Conclusion

- If an alternative investment is considered, one has to keep in mind the fiduciary duties.
- It is important to check in advance, whether an alternative risk premium can be harvested after costs, the amount of investment risk and the extent of liquidity.
- Generally, a pension fund should only invest in Alternative Investments which are completely comprehensible to all members of the pension fund’s board.

“Smart” indexing

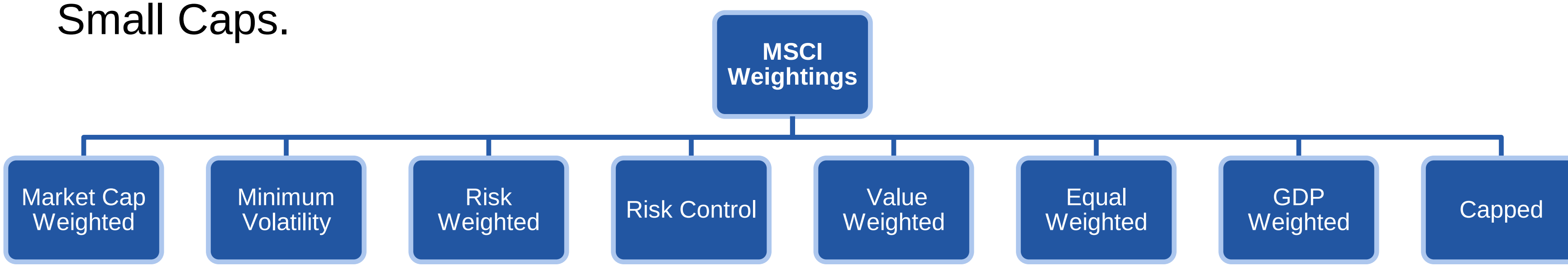
- In recent years, many **“intelligent” indices** arose, which promised an **outperformance** compared to the standard indices.
- Usually these, indices differ in **two dimensions**:
  - **Investment universe:** different indices contain various instruments.
  - **Investment weights:** the instruments within the investment universe are weighted in different ways.

“Smart” indexing
Example MSCI



Source: MSCI

- MSCI has **different index groups**, which lead to many sub-indices. Additionally, groups can intersect with each other, e.g. Emerging Markets and Small Caps.



- MSCI has **different weighting types**, which could be used for all investment universes.

Source: MSCI

“Smart” indexing
Performance

Standard equity index

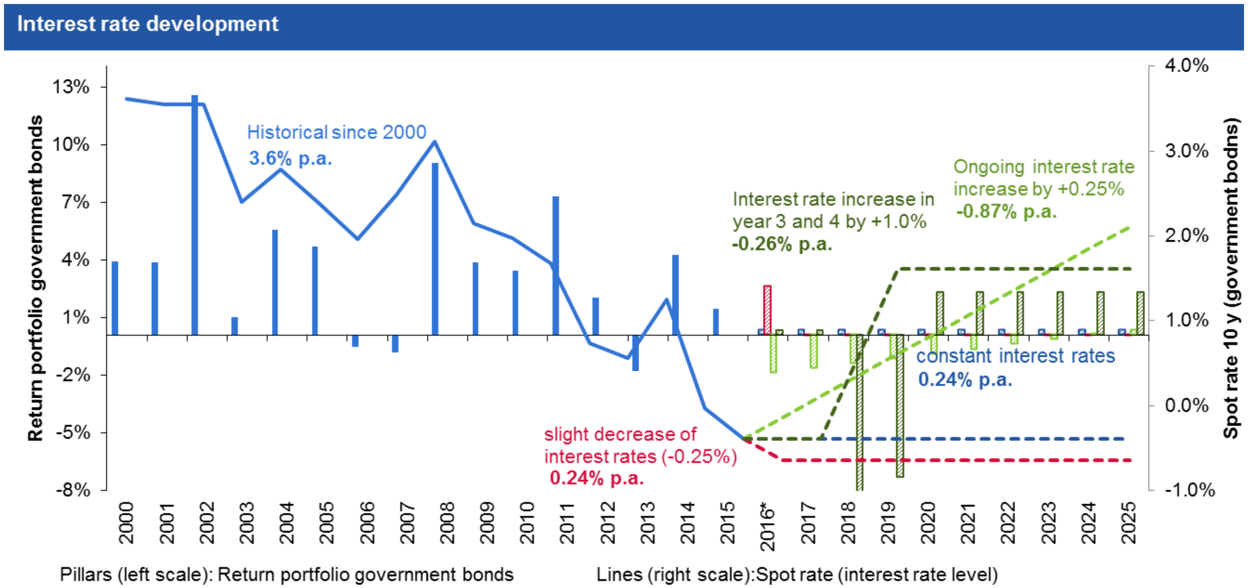
“Smart” indexing
Conclusion

- Can portfolio managers / smart indices beat the market? Sharp’s argumentation:
  - The market portfolio represents all assets. A passive investor holds the market portfolio (i.e., a portfolio with market weights).
  - Smart indices hold a deviant portfolio. For each active investor who beats the market, there has to be another active investor who loses.
  - Overall, active investors do not earn a higher return than the market. After deducing the costs, active investors earn less than passive investors. The same holds for Smart Indexing.

In the long term, Smart Indices should not be able to outperform the standard indices on a consistently and risk adjusted basis. However, in the short and medium term this might be possible.

Wait
Expected returns

- People often argue that the low interest rate environment is only a **short-term phenomenon**.
- Therefore, it could be an opportunity to just wait until the interest rates **normalise** again.



- **Long term returns on Swiss Bonds above 0.5% p.a. are unlikely.**
- **Return of total assets depends (almost) completely on Equities, Real Estate and other risky assets.**

Wait
Conclusion

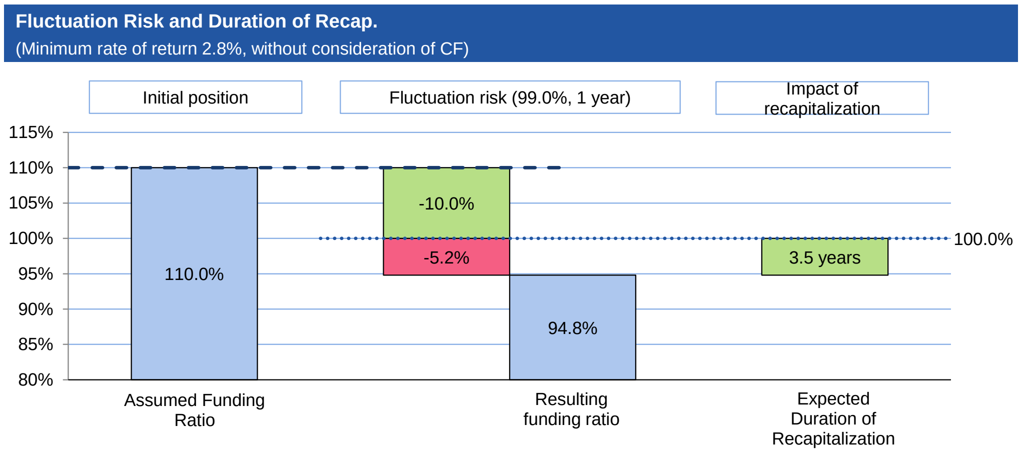
- **The low interest rate environment is a fact. Whether this is "abnormal", "only short-term" or "due to central banks" is not relevant from a financial economic perspective.**
- **The positive effects of an interest rate increase will appear only in the long term.**

Increase investment risk (1)

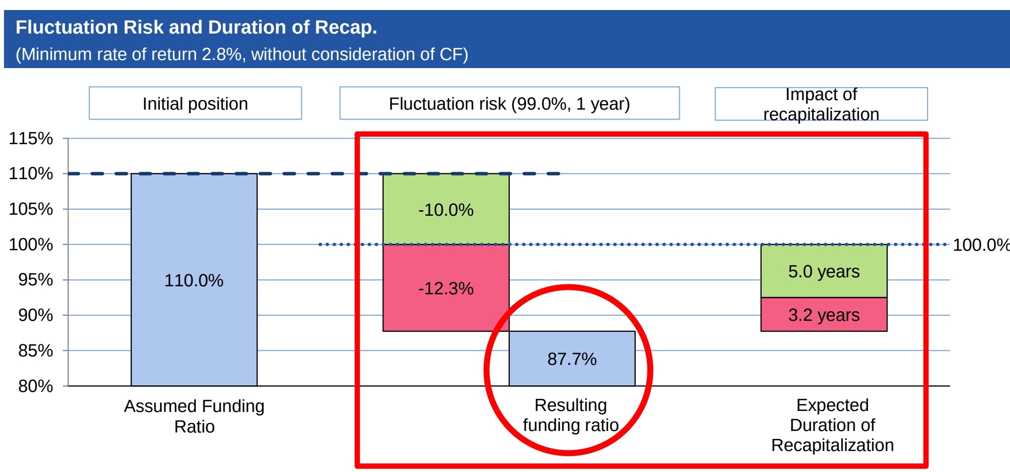
Comparison of portfolios	Alternatives: Portfolio 25% equities (until now)	Alternatives: Portfolio 50% equities (new)	Limits according to BVV 2
Bonds CHF	40%	30%	
Government bonds FC (hedged)	20%	10%	
Swiss Equity	12.5%	25%	50%
Global Equity	12.5%	25%	
Swiss Real Estate	15%	10%	30%
Total	100%	100%	
Total Foreign Currency (unhedged)	12.5%	25%	30%
Total Equities	25%	50%	50%
Expected Return p.a.	1.09%	1.93%	
Volatility = Risk	5.50%	9.19%	

- **Thesis: the current situation forces pension funds to take more risks.**
- **Example: increase** of the **expected return** by a hypothetical increase of the equity allocation from 25% up to 50%.

Increase investment risk (2)



- Impact of recapitalization 1.50% per year.
- A higher proportion of equities can result in a significant drop of the funding ratio if equity markets collapse.



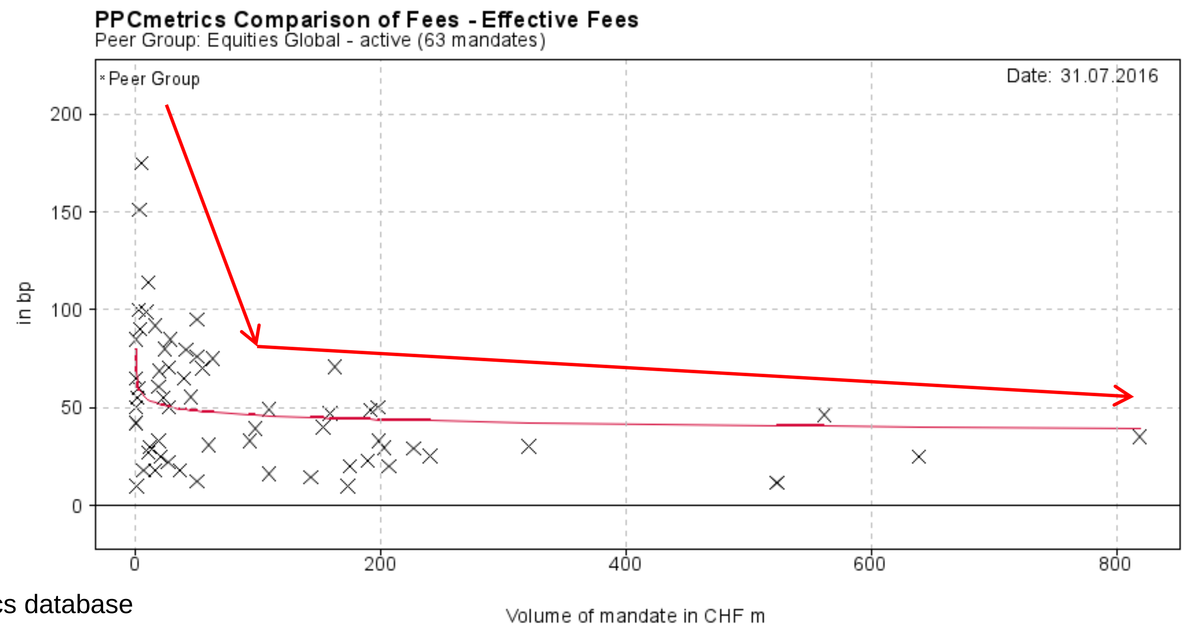
- **Such a low funding ratio could have induced the board of the pension fund to change the investment strategy after a crash like in 2008.**

Increase investment risk (3)
Conclusion

- An increase in risk (e.g. increase of the proportion of equity) is generally a cheap and efficient measure to increase the expected return.
- However, such a measure makes high demands on the capability of recapitalization and on the potential to hold on the strategy in times of crises.

Reduce costs (1)

- **Reducing costs** will definitely increase the expected net return.
- However, pension funds in Switzerland already have rather low costs.
- A further reduction of costs is only possible if pension funds make use of **volume effects or** switch to **passive investments**.



Source: PPCmetrics database

Reduce costs (2)
Passive investment

Date: 31.07.2016	10 Mio.	25 Mio.	50 Mio.	75 Mio.	100 Mio.	200 Mio.	500 Mio.
Highest Fee	130.00 bp	114.00 bp	95.00 bp	90.00 bp	87.50 bp	83.75 bp	46.33 bp
Top 25%	77.50 bp	80.00 bp	70.00 bp	65.33 bp	57.50 bp	48.75 bp	33.73 bp
Mean	**56.24 bp**	**58.22 bp**	**49.58 bp**	**45.05 bp**	**42.50 bp**	**35.40 bp**	**26.78 bp**
Median	**55.00 bp**	**55.50 bp**	**49.50 bp**	**44.51 bp**	**39.03 bp**	**31.40 bp**	**25.96 bp**
Lower 25%	26.00 bp	30.75 bp	25.00 bp	24.58 bp	23.00 bp	20.00 bp	20.00 bp
Lowest Fee	18.00 bp	16.10 bp	10.00 bp	10.00 bp	8.90 bp	10.00 bp	10.00 bp
Number of mandates	19	26	36	36	33	25	18

- **Active global equities** mandate (CHF 75 m): Average flat fee of 0.25% - 0.65%

Date: 31.07.2016	10 Mio.	25 Mio.	50 Mio.	75 Mio.	100 Mio.	200 Mio.	500 Mio.
Highest Fee	105.00 bp	42.00 bp	21.00 bp	20.00 bp	20.00 bp	20.00 bp	11.00 bp
Top 25%	20.93 bp	17.52 bp	12.78 bp	11.00 bp	10.41 bp	8.25 bp	6.40 bp
Mean	**22.19 bp**	**13.20 bp**	**10.88 bp**	**9.84 bp**	**8.96 bp**	**7.49 bp**	**5.54 bp**
Median	**10.00 bp**	**11.00 bp**	**11.00 bp**	**9.80 bp**	**9.00 bp**	**7.00 bp**	**5.03 bp**
Lower 25%	10.00 bp	8.00 bp	6.94 bp	7.37 bp	6.95 bp	5.25 bp	3.95 bp
Lowest Fee	4.00 bp	2.00 bp	2.00 bp	2.00 bp	2.00 bp	2.00 bp	2.50 bp
Number of mandates	15	28	40	50	53	49	42

- **Passive global equities** mandate (CHF 75 m): Average flat fee of 0.07% - 0.11%

Indexing results in lower costs.

Source: PPCmetrics database

Reduce costs (3)
Costs of Swiss pension funds

Total of Asset Management Costs (AMC) as of 31.12.2015
in % of transparent investements

Pension funds	Assets*	Number	Minimum	1. quartile	Average	Median	3. quartile	Maximum
Public-law	174'688	39	0.060%	0.230%	0.428%	0.420%	0.516%	1.130%
Private-law	304'124	176	0.029%	0.270%	0.417%	0.370%	0.510%	1.370%
Defined contribution plans	402'479	196	0.029%	0.260%	0.416%	0.370%	0.502%	1.370%
Defined benefit plans	32'012	8	0.360%	0.438%	0.597%	0.561%	0.685%	0.920%
Vollkapitalisierte	416'768	202	0.029%	0.270%	0.419%	0.380%	0.510%	1.370%
Teilkapitalisierte	62'043	13	0.060%	0.240%	0.419%	0.351%	0.433%	0.920%
All pension funds	478'812	215	0.029%	0.261%	$\boxed{0.419\%}$	0.380%	0.510%	1.370%

*Pension fund assets according to art. 44 BVV 2

Reduce costs
Conclusion

- Performance is always afflicted with uncertainty, but costs do occur definitely.
- Reducing costs is a useful measure in the current low interest rate environment.
- However, the effect is limited:
  - Pension funds already have low costs.
  - Additional cost reductions are only possible by using the volume effect or by Indexing.

Summary

- The low interest rate environment affects directly and indirectly all asset classes.
- Accordingly, expected returns are considerably lower than 20 years ago.
- “Investment pearls” are rare.
- A general increase of the investment risk requires an appropriate risk capability.
- An adjustment of the contributions to the economic reality is indispensable.

Contact

Investment & Actuarial Consulting,
Controlling and Research

PPCmetrics AG
Badenerstrasse 6
Postfach
CH-8021 Zürich

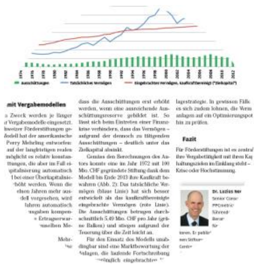
Phone	+41 44 204 31 11
Fax	+41 44 204 31 10
E-Mail	ppcmetrics@ppcmetrics.ch

PPCmetrics SA
23, route de St-Cergue
CH-1260 Nyon

Phone	+41 22 704 03 11
Fax	+41 22 704 03 10
E-Mail	nyon@ppcmetrics.ch

Website	www.ppcmetrics.ch
Social Media	

PPCmetrics (www.ppcmetrics.ch) is a leading Swiss investment consultant, investment controller, strategic investment advisor, and pension actuary. Our clients are institutional investors (e.g., pension fund, benefits plan, insurance, health insurance, foundation, NPO and treasury department) as well as private clients (e.g., private investor, family office, family foundation or Ultra High Net Worth Individuals UHNWI). Our services include investment consulting and investment advice as well as the definition of an investment strategy (Asset Liability Management ALM), portfolio analysis, asset allocation, the development of investment guidelines, legal consulting, asset manager selection, the implementation of public tenders, investment controlling, actuarial consulting, and activities as pension actuary.



Videos

**Publika-
tionen**

Website

Tagungen

Jährlich publizieren wir mehr als 40 Fachartikel zu unterschiedlichen Fragestellungen.

Unsere Fachleute teilen ihr Wissen und ihre Meinungen mit der Öffentlichkeit.

Erleben Sie uns live an den diversen Tagungen, die wir mehrmals jährlich organisieren.

PPCmetrics AG Investment & Actuarial Consulting, Controlling and Research. **Mehr**