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EPFIF Swiss Seminar

Higher Interest Rates & Inflation – Implications for Asset, Liabilities and Funding Levels

PPCmetrics AG

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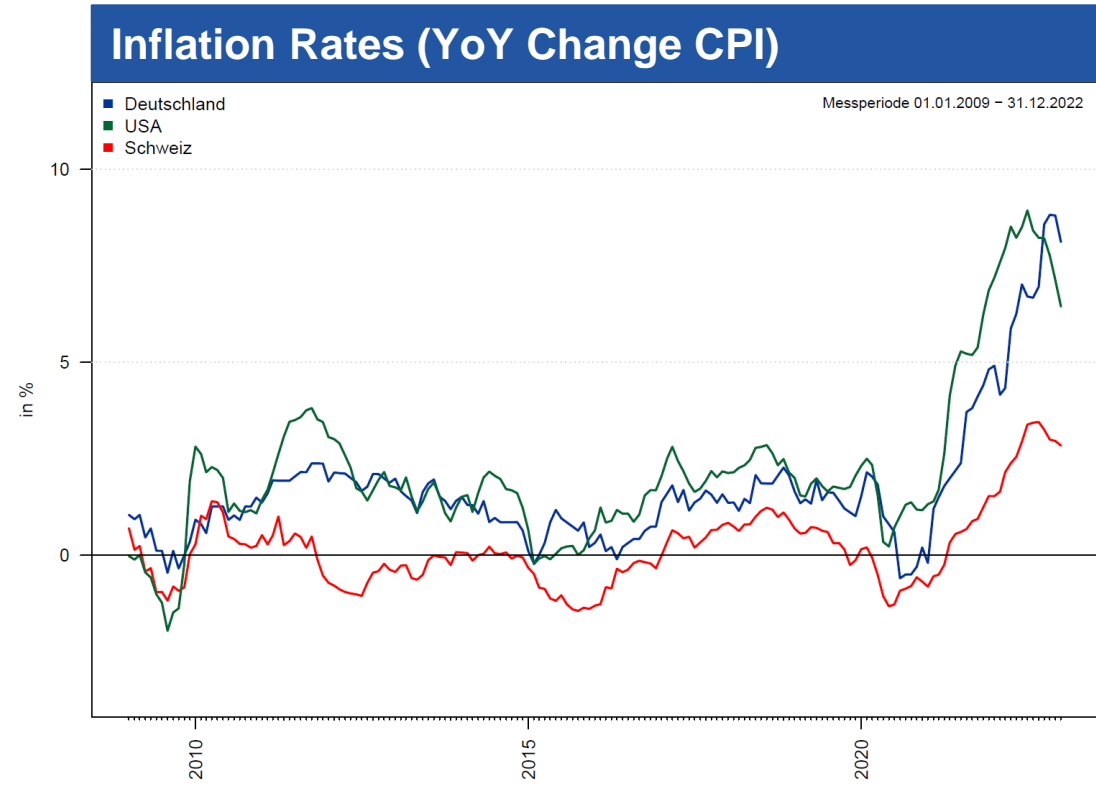
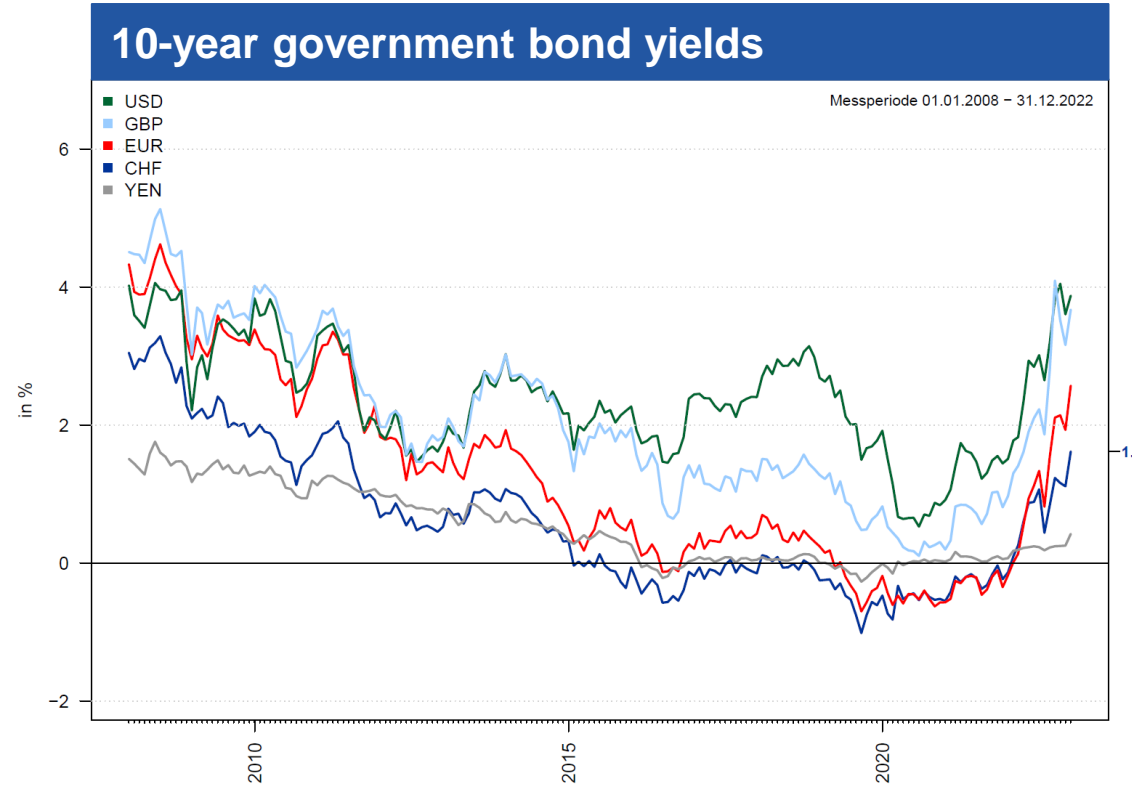
Bern, 20 September 2023

Table of contents

1. Recap of 2022	3 - 5
2. Interest rate sensitivity of real assets	6 - 11
3. Asset liability view	12 - 18
4. Implications for future investment strategy	19 - 21

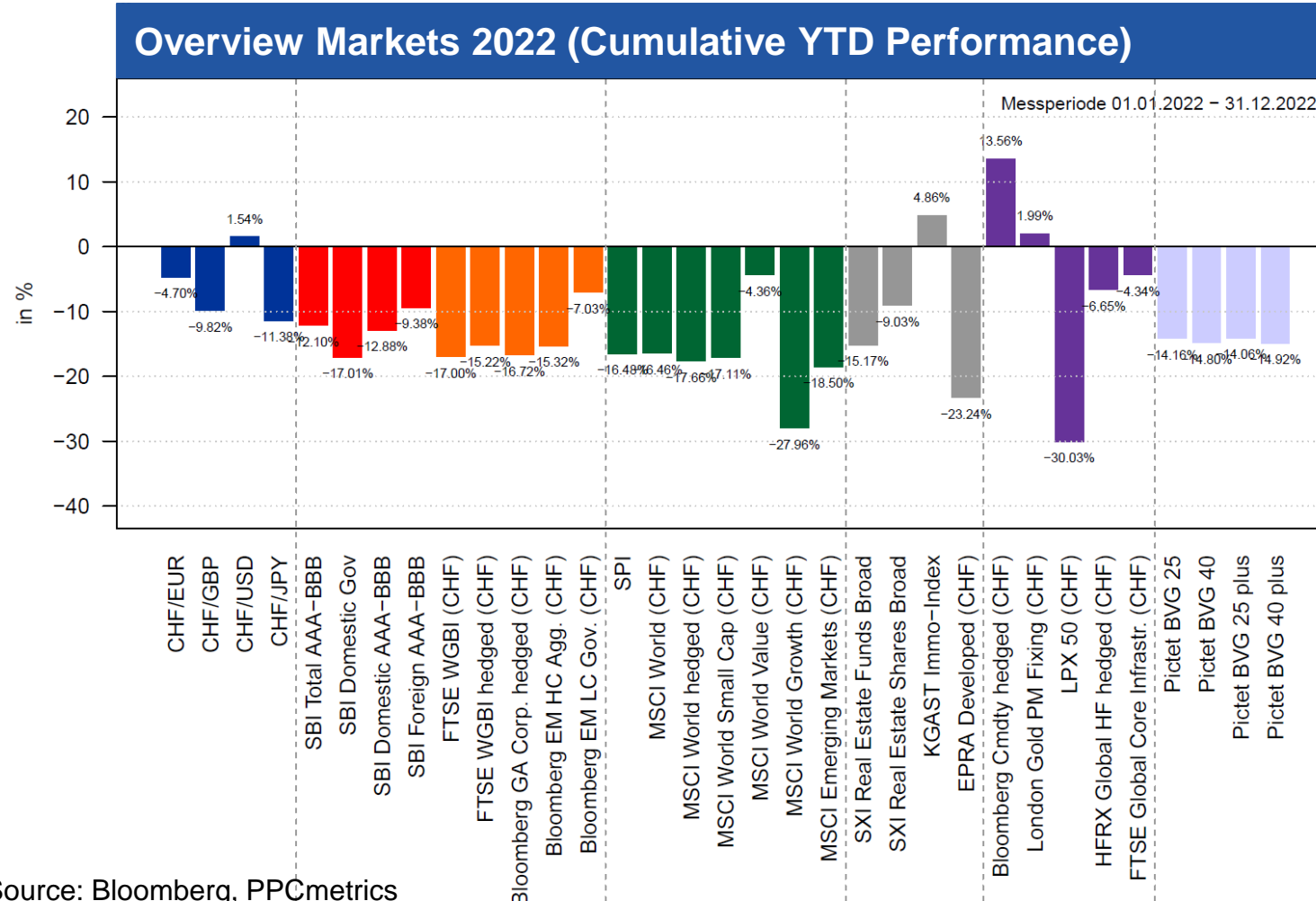
1. Recap of 2022

Long-Term Interest Rates and Inflation



- ▶ Significant increase of 10-year government bond yields after sustained decline.
- ▶ Return of inflation after a long period of low inflation rates.

Source: Bloomberg, PPCmetrics



- ▶ Over the course of 2022, most asset classes showed a substantial negative performance
- ▶ Real assets were almost similarly hit as nominal assets.

Source: Bloomberg, PPCmetrics

2. Interest rate sensitivity of real assets

Interest rate sensitivity of real assets

Basic theoretical considerations

$$\text{Asset Value} = \sum_t \frac{\text{Cashflows}_t}{(1 + \text{Nominal Interest Rate}_t + \text{Risk Premium}_t)^t}$$

Nominal Interest Rate = Real Rate + Expected Inflation

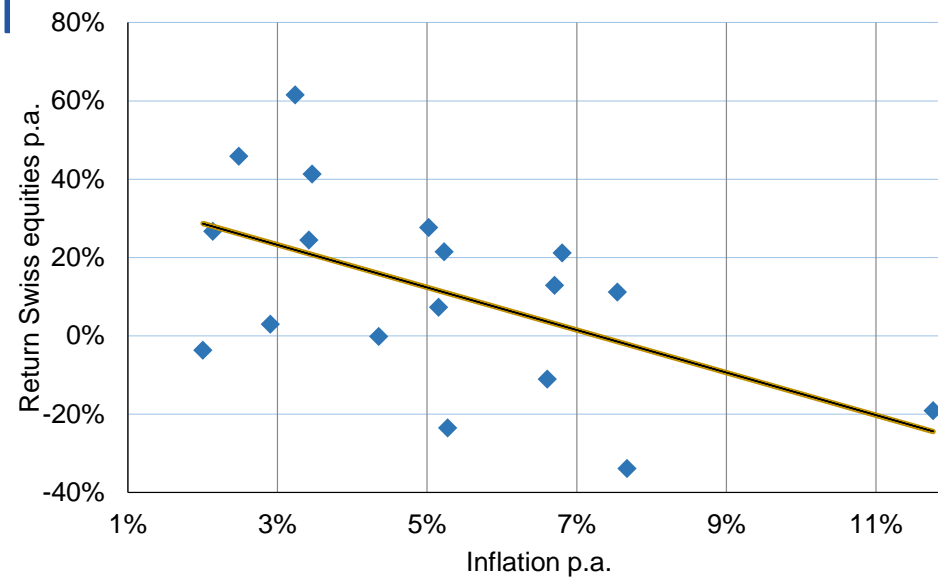
- ▶ Realised inflation affects cash flows.
- ▶ Inflation expectations...
 - ...have a direct impact on **nominal interest rates**.
 - ...usually impact **cash flow expectations**.

Interest rate sensitivity of real assets

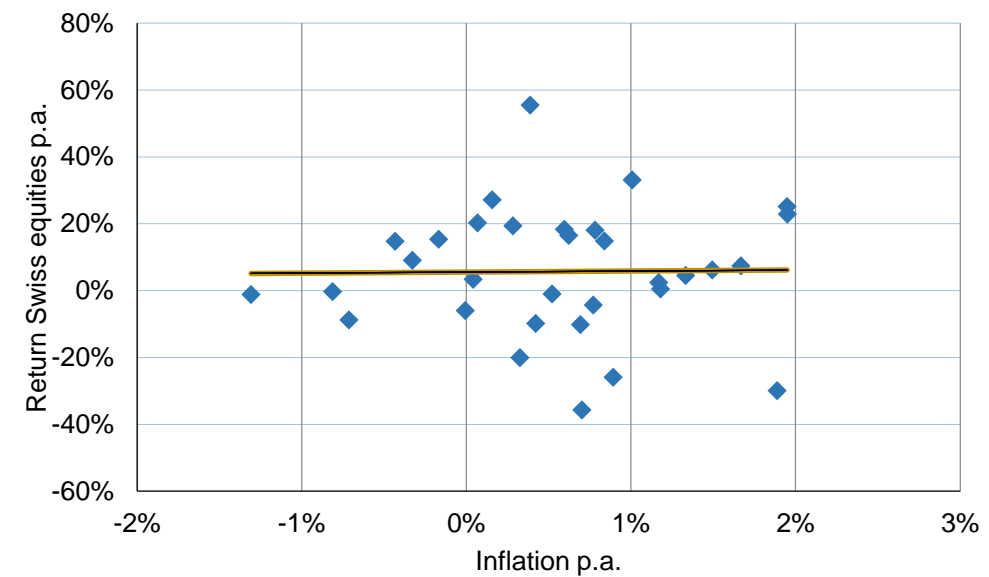
Equity

- The **relationship between inflation and equity returns** depends on various factors:

Return Swiss equities vs. Swiss inflation > 2% p.a.



Return Swiss equities vs. Swiss inflation < 2% p.a.



- The **negative correlation** between **inflation** and **equity returns** only arises **above a certain level of inflation**.

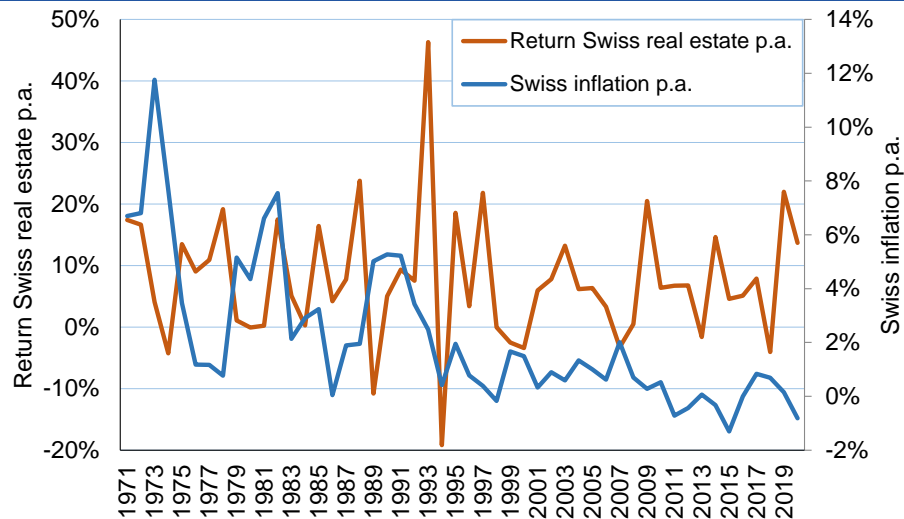
Source: Bloomberg, Federal Statistical Office, PPCmetrics

Interest rate sensitivity of real assets

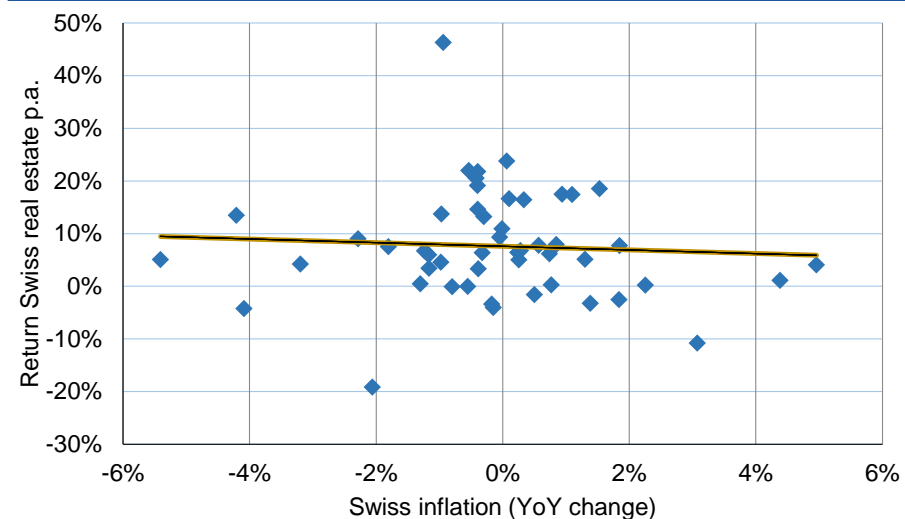
Real Estate

- In the **short run**, the **relationship** between **inflation** and **real estate prices** is **unstable** due to the **strong influence of other factors**.
- In the **long run**, however, real estate tends to offer a **certain degree of inflation protection**.

Development of inflation and real estate returns



Return real estate vs. YoY Change of inflation



- However, a **“crash”** due to a **surge in inflation and interest rates** is **possible**.

Source: Bloomberg, Federal Statistical Office, PPCmetrics

Interest rate sensitivity of real assets

Non listed Swiss Real estate (1)

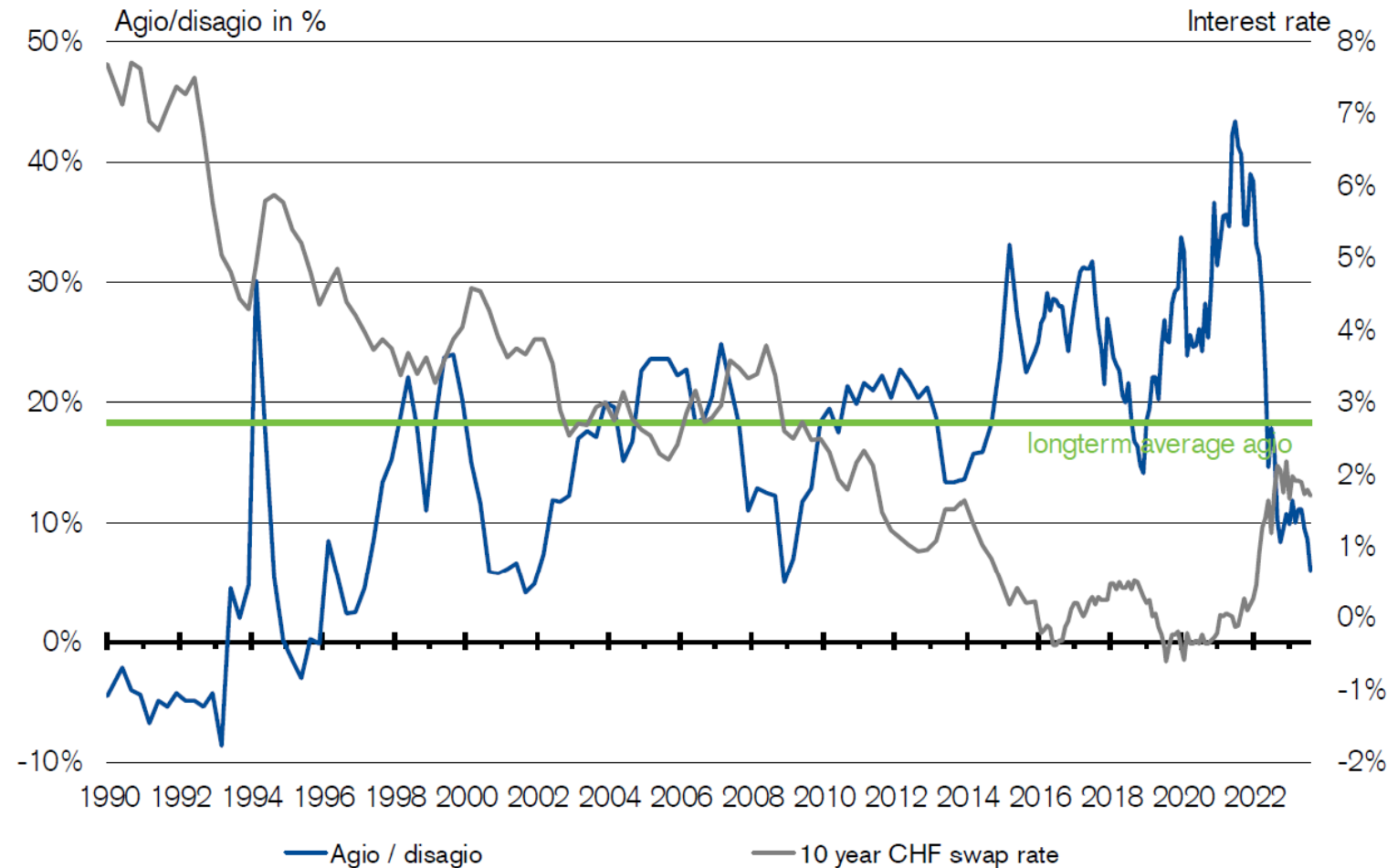


► Listed and non listed Swiss real estate have converged.

Source: Bloomberg, PPCmetrics

Interest rate sensitivity of real assets

Non listed Swiss Real estate (2)



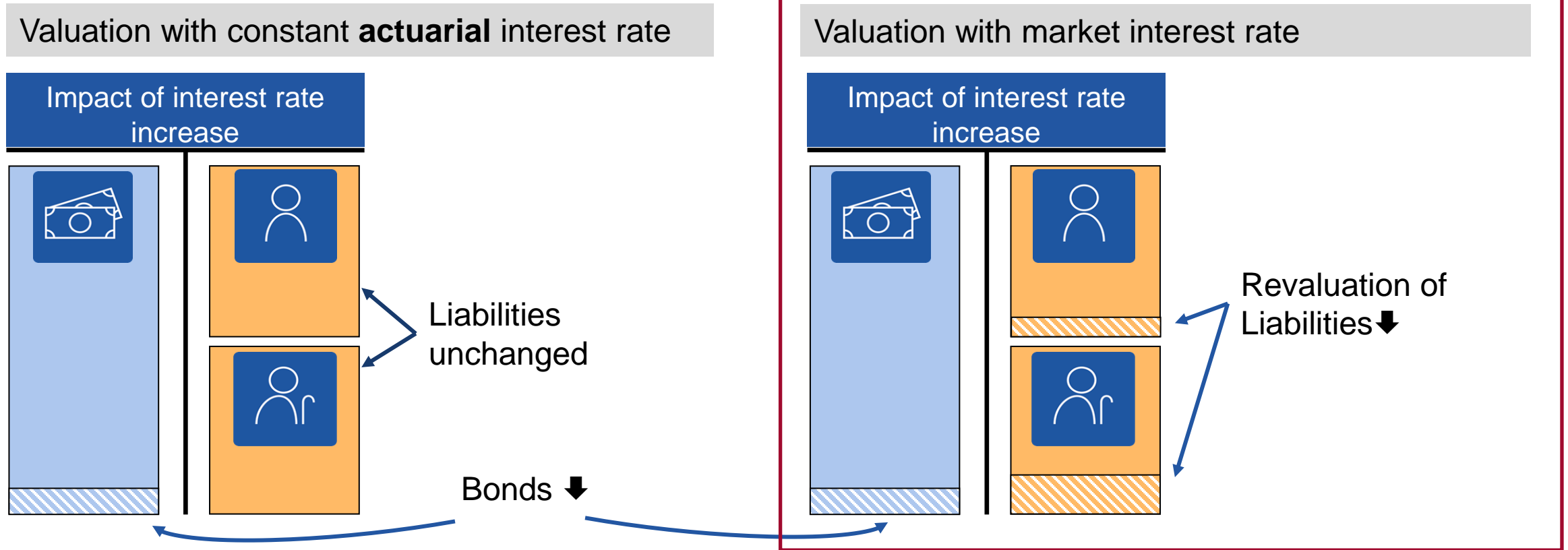
► Non listed Swiss real estate («Anlagestiftungen») had valuation reserves.

Source: Credit Suisse "Swiss Real Estate Funds At a glance"

3. Asset liability view

Asset Liability Management

Valuation of Liabilities

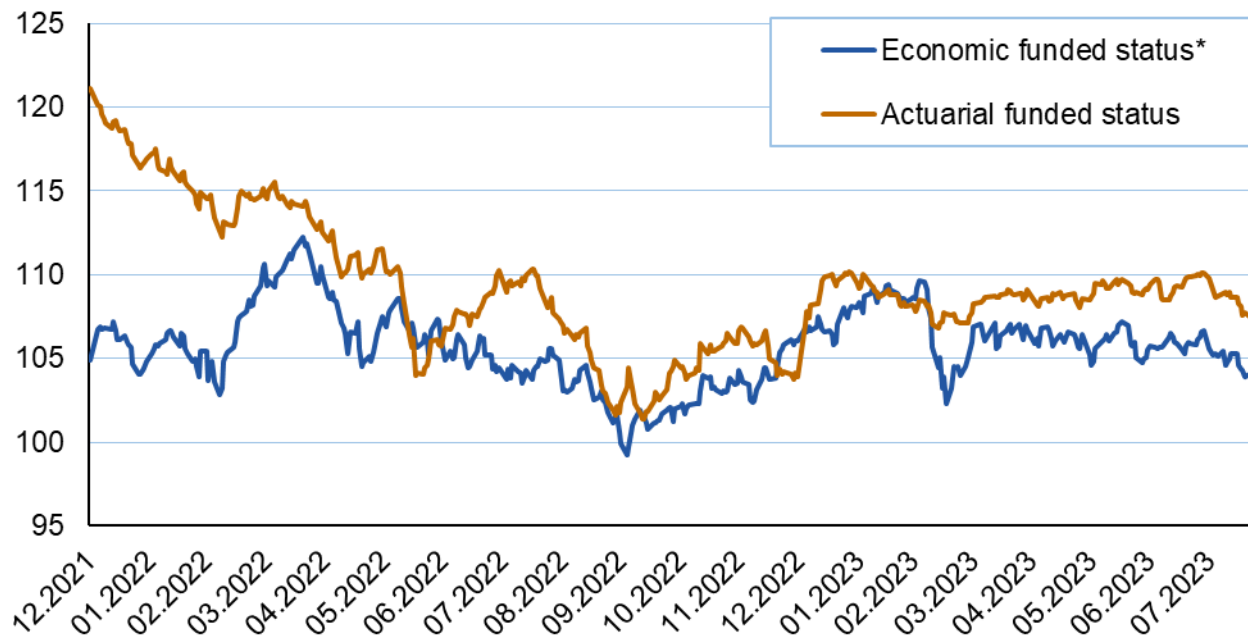


- ▶ Most pension funds do not directly reflect interest rate changes in their discount rates (actuarial interest rate).

Asset Liability Management

Funded Status of Swiss Pension Funds

Estimated funded status of Swiss Pension Funds (PPCmetrics Pension Ticker)



→ Over the year 2022, there has been hardly any change in the economic funded status.

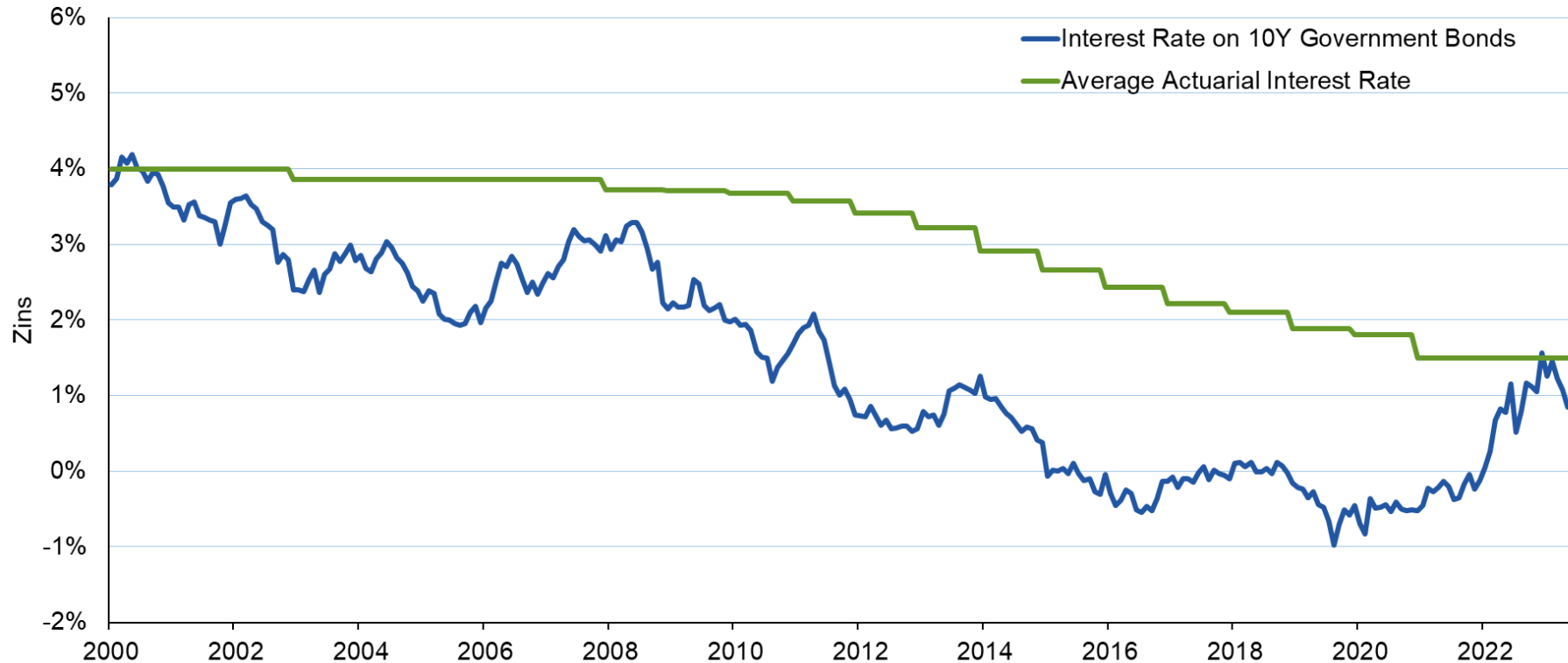
- ▶ As Swiss Pension Funds are typically positioned short duration...
- ▶ ...they were able to economically absorb losses in equity and real estate markets in 2022.

* Including economic pension losses (and gains) over each of the next five years.

Source for daily updated values: www.ppcmetrics.ch/pension-ticker.

Actuarial interest rate of Swiss Pension Funds

Development of interest rates and actuarial interest rate



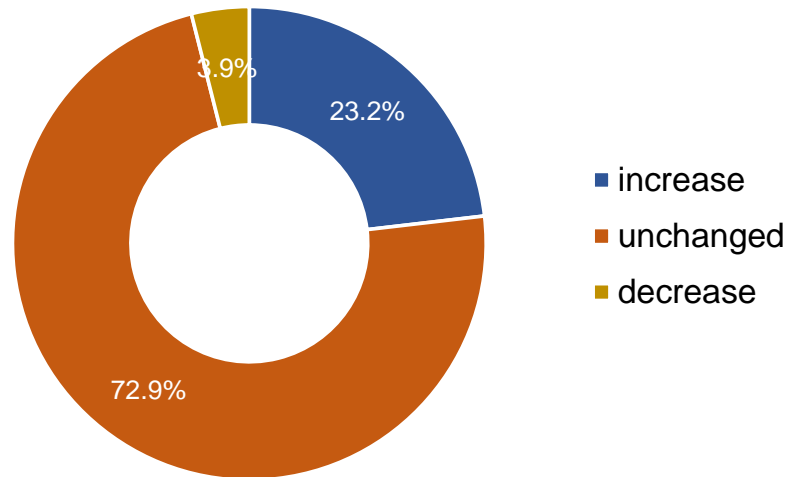
- The long-term risk-free rate is now approximately in line with the average actuarial interest rate.

Source: Swiss National Bank, PPCmetrics

Change in actuarial interest rate 2022 vs. 2021

Change in actuarial interest rate 2022 vs. 2021

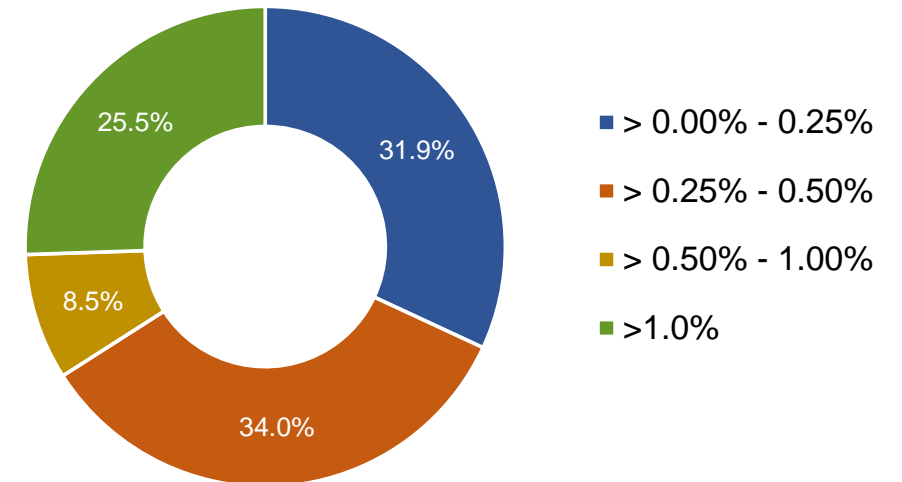
Peer Group: All occupational benefits institutions (n = 203, CHF 576.0 bn pension assets)



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In case of increase: increase steps

Peer Group: All occupational benefits institutions with increase (n = 47, CHF 178.4 bn pension assets)

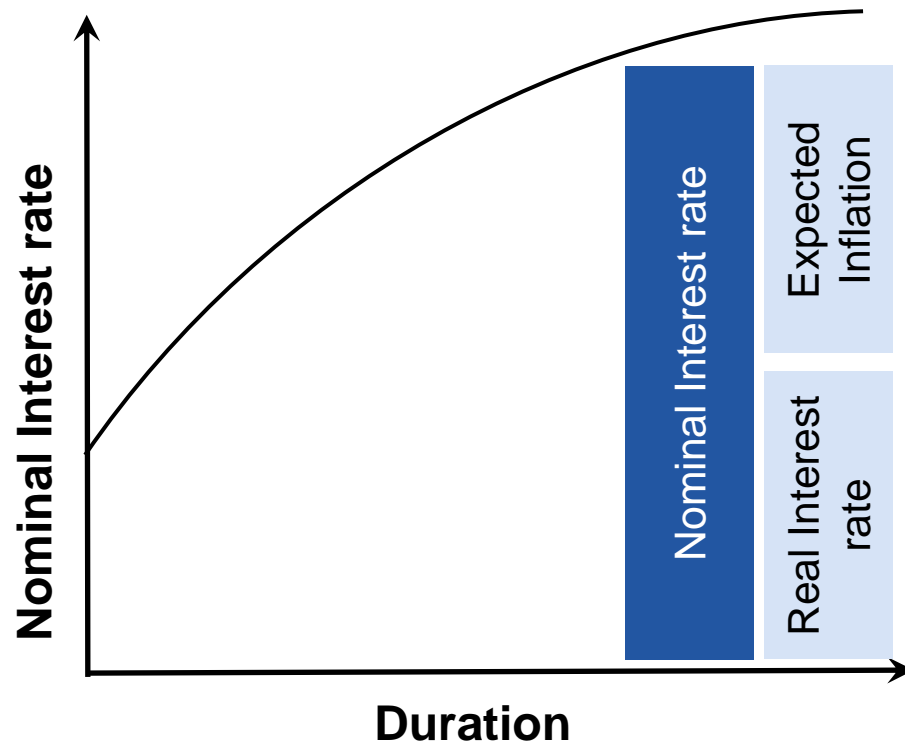


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- ▶ **Most Swiss Pension Funds have left the actuarial interest rate unchanged as of 31.12.22.**
- ▶ **Of the pension funds that have increased the actuarial interest rate, most increased the rate by no more than +0.5% points.**

Source: PPCmetrics

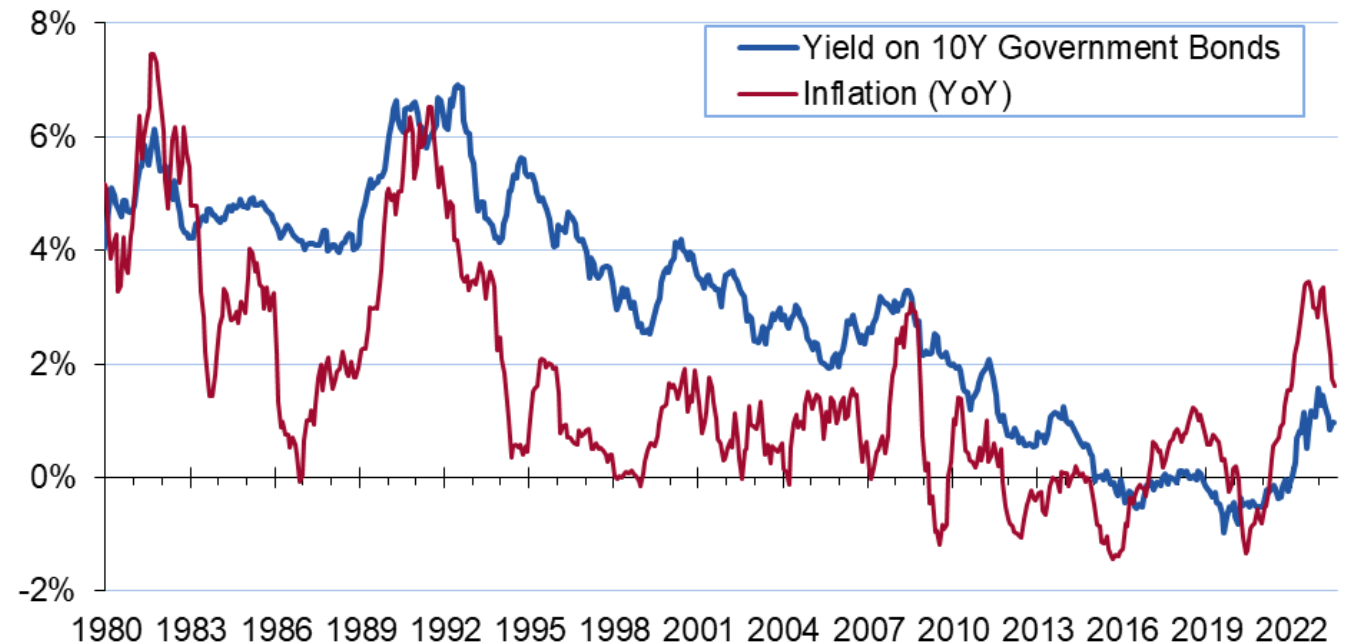
Interest Rates and Inflation



- Due to the link between inflation and nominal interest rates...

Source: Bloomberg, Federal Statistical Office, PPCmetrics

Development of Interest Rates and Inflation



- ...inflation and interest rates tend to move in lock-step.

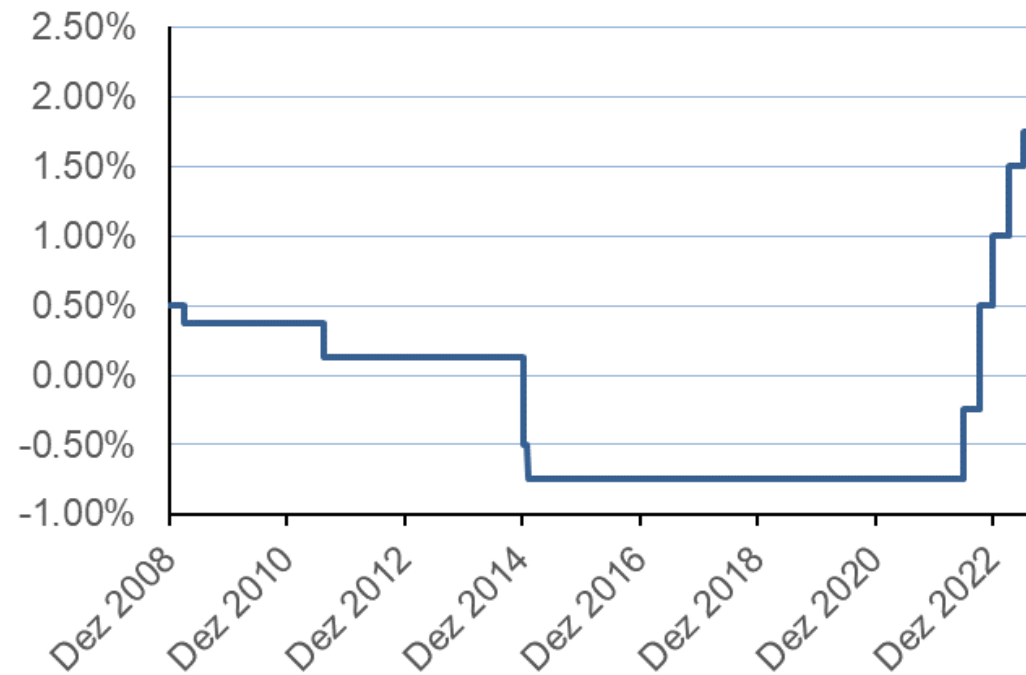
Conclusion on what happened

- While the **increase in interest rates and inflation** led to a **detrimental investment year 2022**,...
- ...the **financial situation** of a typical Swiss Pension Fund **did not worsen**.
- The reason is that the **typical Swiss Pension Fund is distinctively positioned short duration**...
- ... and there is **no automatism of inflation compensation** (“... wenn es die finanzielle Lage erlaubt”).

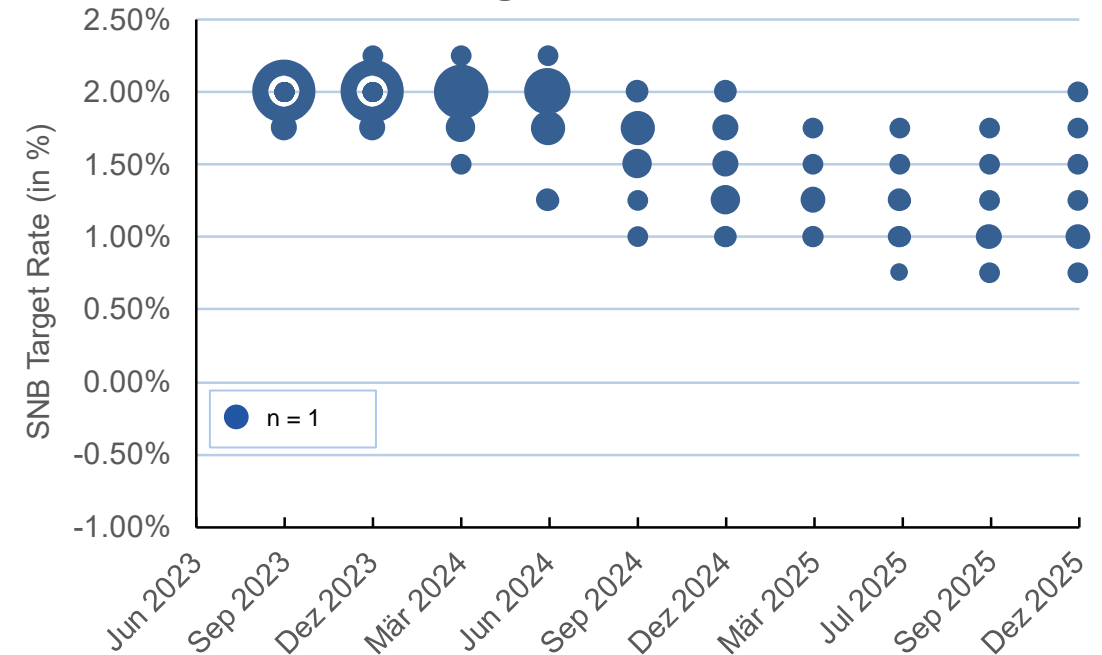
4. Implications for future investment strategy

What goes up must come down?

Development of SNB Target Rate



Analyst Prognoses of SNB Target Rate



- ▶ While rate cuts in the negative interest rate environment were virtually impossible,...
- ▶ ...there is now room for interest rates to go lower.

Source: Bloomberg, Swiss National Bank, PPCmetrics

Future considerations

- Is a **further increase in inflation a risk** to a typical Swiss Pension Fund?
 - ▶ **NO**
 - Typical pension funds are positioned short duration and will benefit from a further increase in inflation (and interest rates).
 - Swiss pension obligations are nominal obligations. Compensation of excess inflation is not an obligation
 - Is a **decrease in interest rates a risk** to a typical Swiss Pension Fund?
 - ▶ **YES**
 - Typical pension funds are positioned short duration and will suffer from a decrease in interest rates (and inflation).
 - Swiss pension obligations are nominal obligations. Disinflation or deflation cannot be passed on to retirees.
- ▶ **Swiss Pension Funds should discuss the trade-off between the ability to compensate excess inflation and hedging their nominally fixed obligation against falling interest rates.**



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