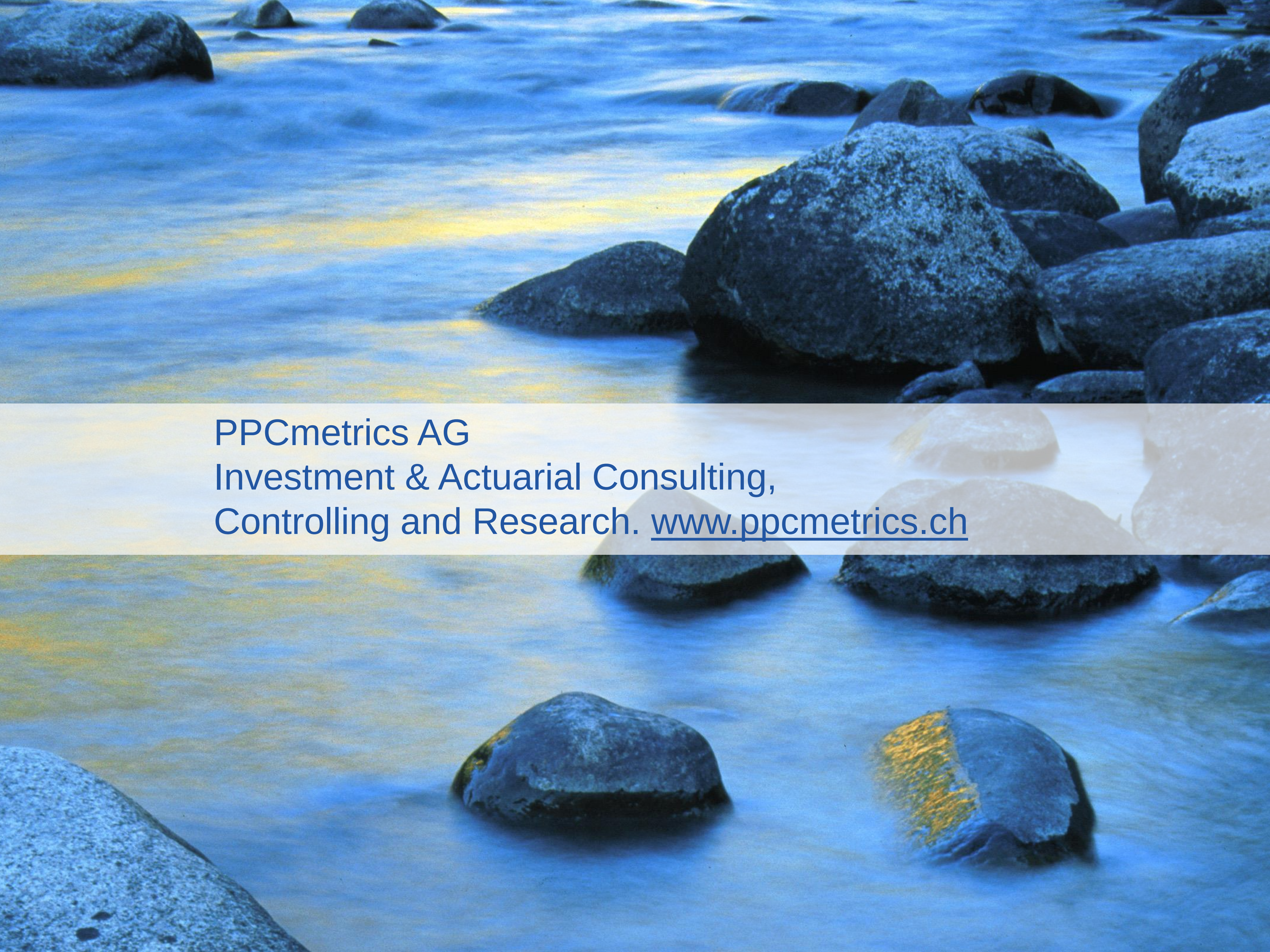

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Asset Liability Management

Currency Risk and Implications for Swiss Pension Funds

European Pension Fund Investment Forum

PPCmetrics AG
Lukas Riesen, CFA, Partner

Zurich, 1st March 2016

Should the foreign currency risk be hedged?

Statements made by investment professionals

During Currency Peg	After Currency Peg
• Foreign currency risk **should be hedged** because – of the minimal interest rate differential. – of the uncertainty concerning the suspension of the fixed minimum rate.	• Foreign currency risk **should be hedged** because – of the uncertainty concerning the future development.
• Foreign currency risk **should not be hedged** because – the SNB does the hedging for free. – of the asymmetric risk distribution (free Call Option). – of the steeper EUR yield curve.	• Foreign currency risk **should not be hedged** because – the Swiss franc is too expensive.

Should the foreign currency risk be hedged?
Conclusion

- Independently of the situation, the fundamental <u>strategic</u> question to answer is: **“Is there a risk premium for taking foreign currency risk and if yes, is it high enough?”**

- Foreign currency risk should <u>not</u> be hedged if
  – the investor beliefs that there is a risk premium and is of the opinion that the premium is high enough to compensate the risk.

- Foreign currency risk should be hedged if
  – the investor does not believe that there is a risk premium for taking foreign currency risk.
  – the investor believes in the existence of a risk premium but is of the opinion that there are other risk factors for which a higher risk premium can be expected.

Should the foreign currency risk be hedged?
Existence of a risk premium

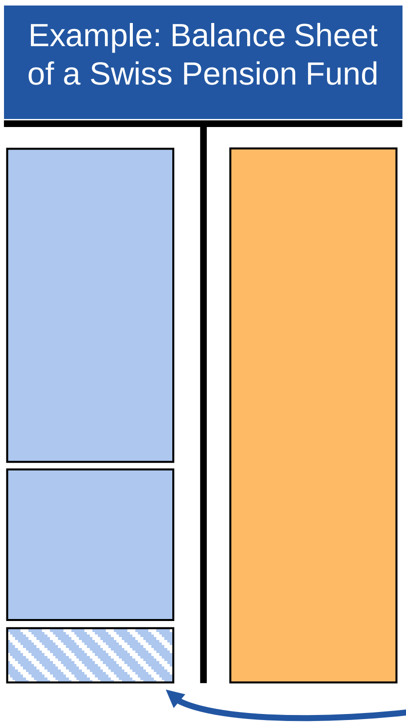
- **Disagreement** in the research regarding the **existence of a risk premium**. (e.g. Perold and Schulman (1988) and Campbell, Viceira and White (2002)).

- Existence of the risk premium is **highly uncertain**.

- Intuition: currency gains and losses are **zero-sum-games**.

▸ **The return argument is usually not the crucial aspect for the hedging decision.**

Perspective of a pension fund
Liabilities are fully denominated in CHF



Example: EUR depreciates (=CHF appreciates)

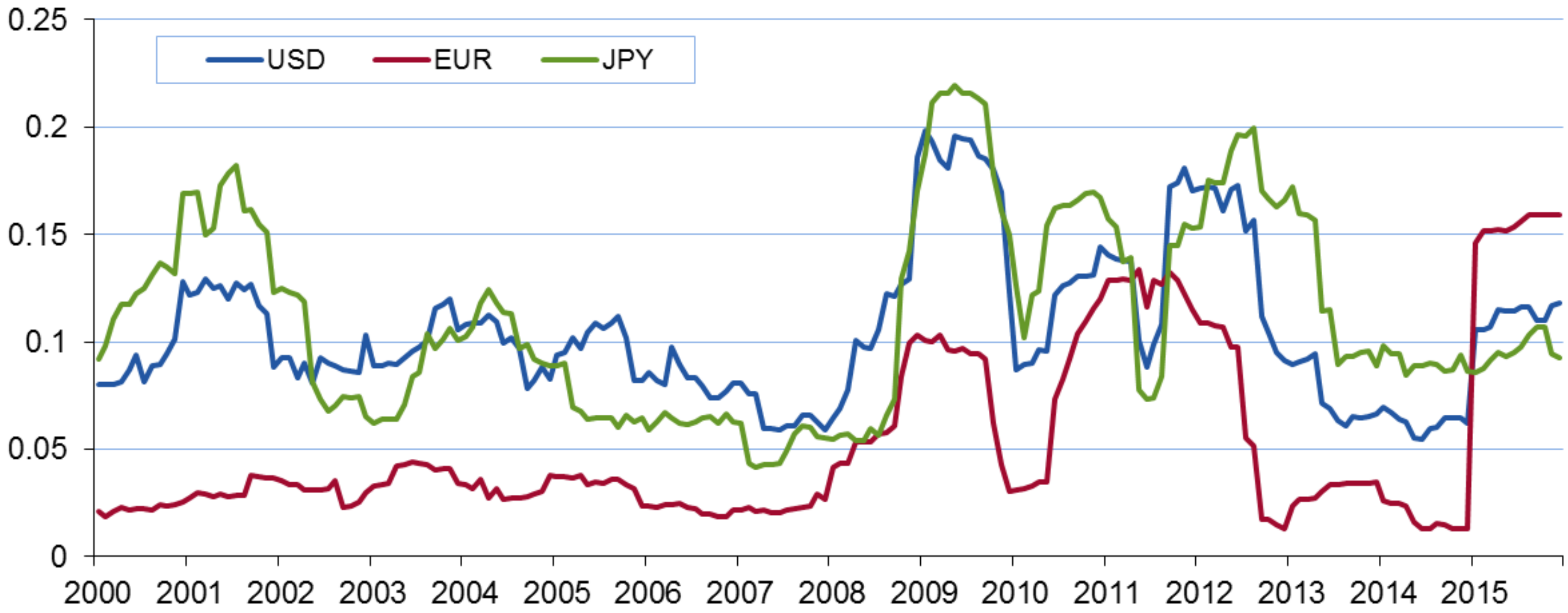
Liabilities are fully denominated in CHF

Market value of unhedged foreign currency assets decreases

- **Foreign currency risks increase the deviation against the liabilities.**

Foreign currency hedging
Risk reduction through foreign currency hedging (1)

Rolling volatility p.a. (12 months) of selected currencies against CHF



- **Currency risks can be tail risks, as the CHF is a safe haven currency.**

Foreign currency hedging
Risk reduction through foreign currency hedging (2)

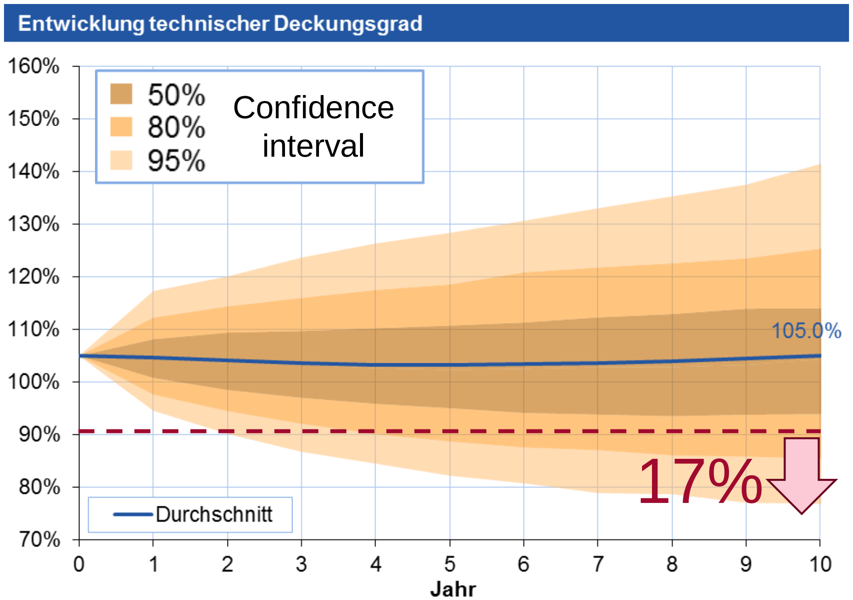
Representative Swiss Pension Fund	with hedge	without hedge
Cash CHF	2%	2%
Bonds CHF	35%	35%
Bonds FC	0%	10%
Bonds FC (hedged)	10%	0%
Swiss Equity	10%	10%
Global Equity	0%	20%
Global Equity (hedged)	20%	0%
Swiss Real Estate	18%	18%
Global Real Estate (hedged)	5%	0%
Global Real Estate	0%	5%
Total	**100%**	**100%**
Total Foreign Currency (unhedged)	0%	35%

Historical 31.01.1972 - 31.12.2015	with hedge	without hedge
Return p.a.	6.1%	6.0%
Volatility p.a.	5.8%	6.8%

- **Risk** after currency hedging is **significantly lower**.
- **Little impact on returns** during that period.

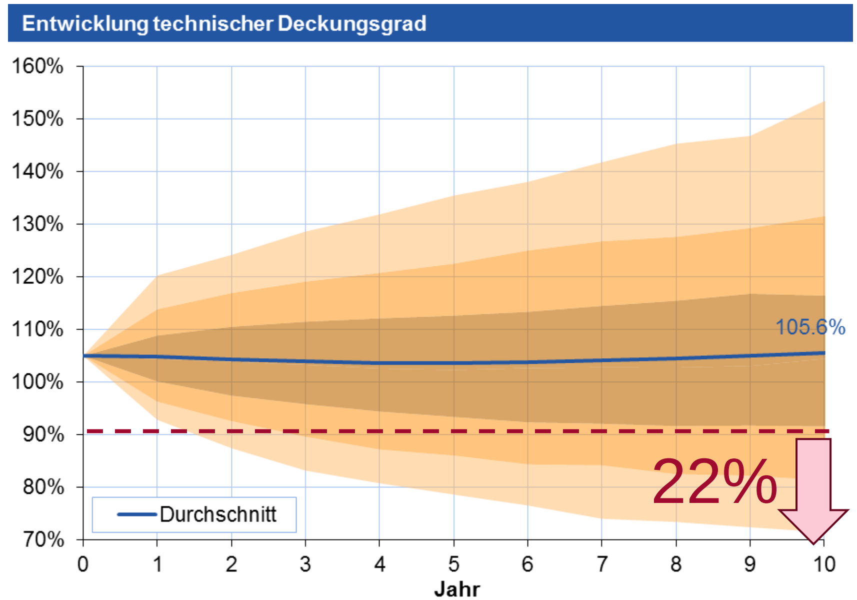
Foreign currency hedging
Risk reduction through foreign currency hedging (3)

WITH foreign currency hedge



Mean volatility = 5.8% p.a.

WITHOUT foreign currency hedge

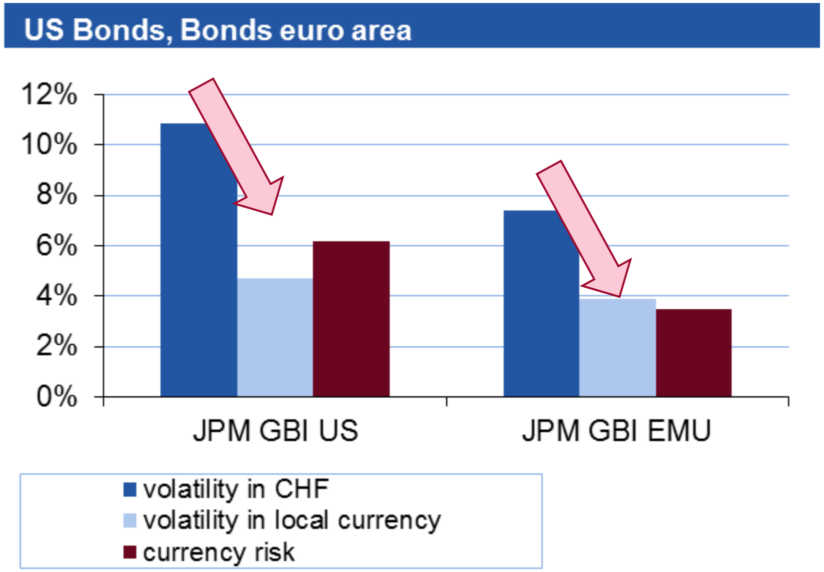


Mean volatility = 6.8% p.a.

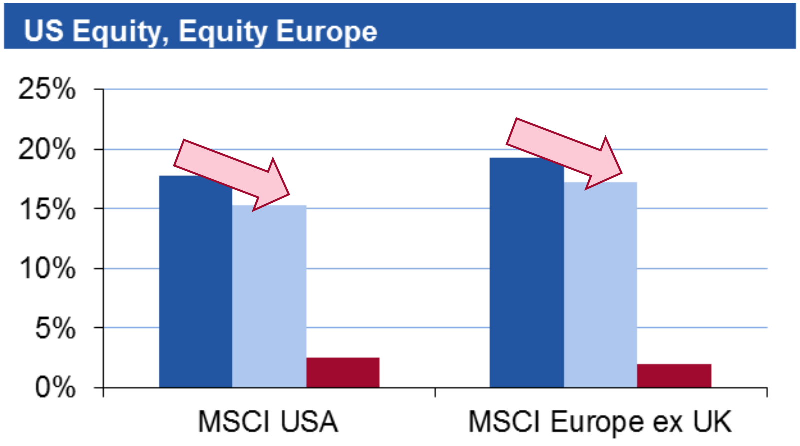
- Foreign currency risks **increase the volatility** of the funded status (FS) as well as the **probability of an FS < 90%**.

Foreign currency hedging
Risk reduction through foreign currency hedging (4)

- **Bonds**



- **Equity**



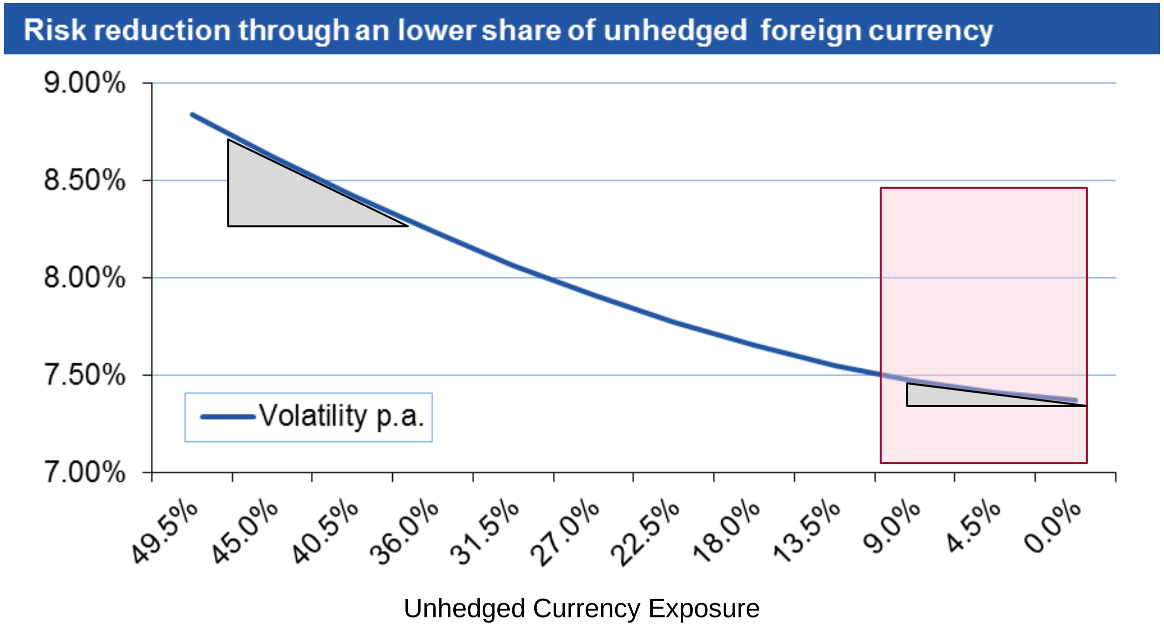
Source: Bloomberg, own calculations
Monthly data 1999-2015

- Higher risk reduction for bonds only in an isolated view.
- Currency exposure should be taken into consideration (e.g. lower USD exposure in Bonds FC compared to Global Equity).
- **Define the optimal quota taking the entire portfolio into consideration (ALM).**

Foreign currency hedging

Risk reduction through foreign currency hedging (5)

- Experience shows that the optimal quota of foreign currency exposure lies in the range of 10% because the liabilities are denominated in CHF.



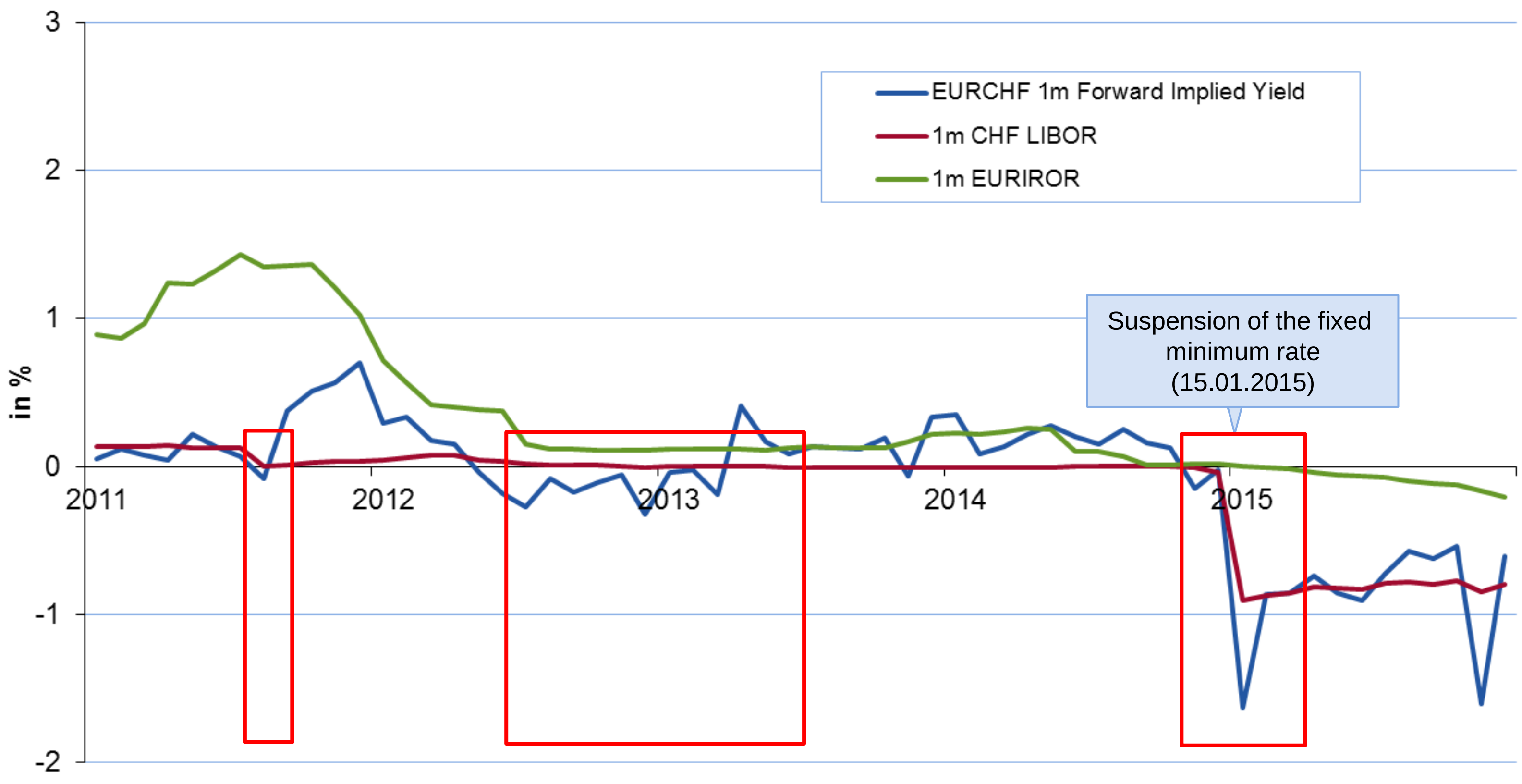
Current situation
Hedging costs (1)

- The following factors are often referred to as **hedging costs**:
  - money market interest rate differential
  - Bid-Ask-Spreads of forward exchange rates
  - asset management fees

- Shortly after the suspension of the fixed minimal rate, the prices of forward exchange rates were **“unattractive”**.
- Because of **poor market liquidity** and potential market interventions of the SNB, the prices were **below their fair value**.

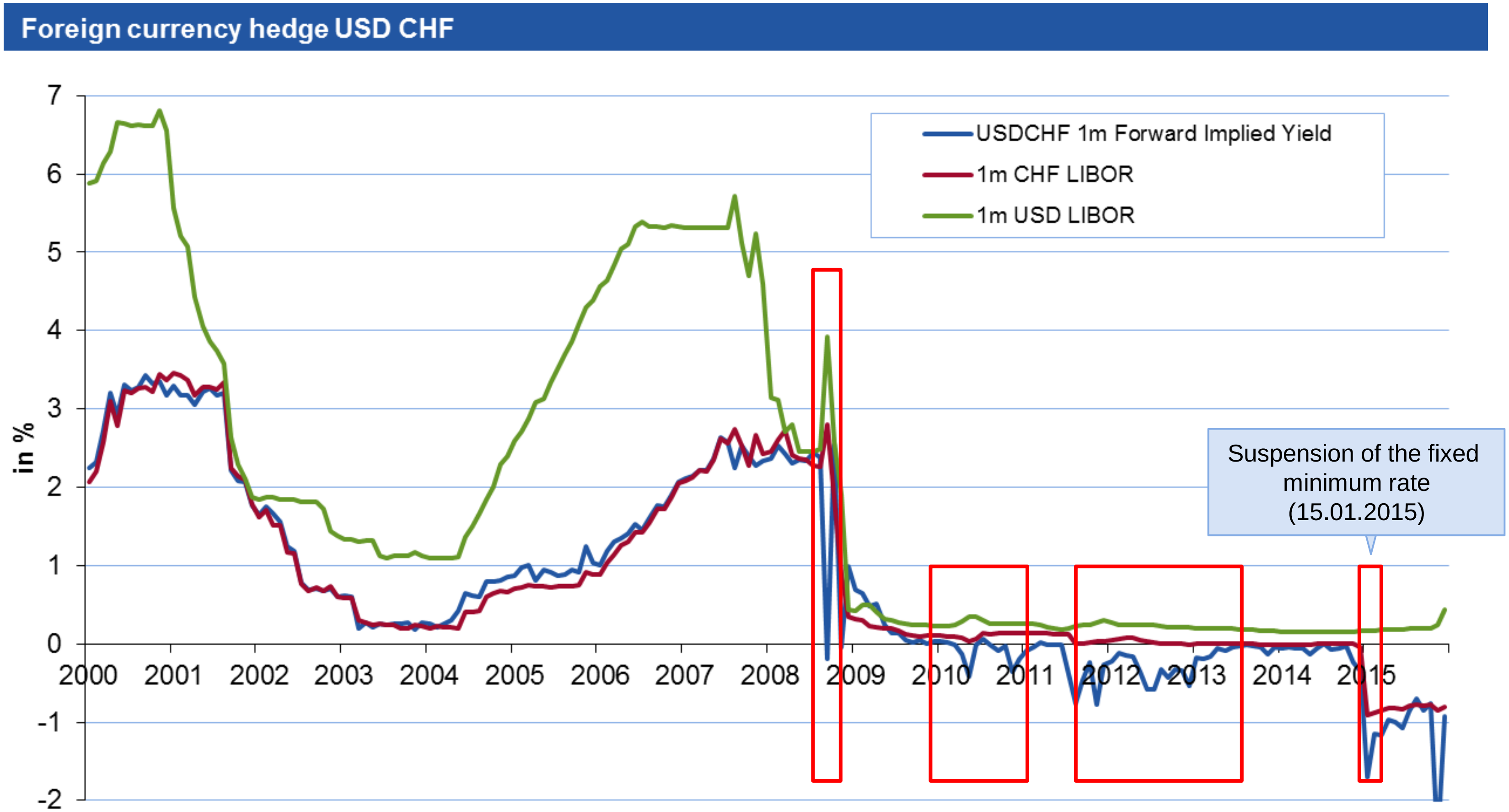
Current situation
Hedging costs (2)

Foreign currency hedge EUR CHF



The EURCHF 1m Forward Implied Yield is only calculated after 2011.

Current situation
Hedging costs (3)



- There were different periods in history with **“unattractive” forward exchange rates**.

Current situation
Hedging costs (4)

- Currently, a “risk-free” (currency-hedged) investment in USD with a maturity of one month has a negative yield of -0.92%. Compared to that, the 1-month CHF LIBOR has a “higher” yield of -0.80%. Attention: these yields include different credit risks and because of that they are not perfectly comparable.
- Such “anomalies” have already existed in previous periods, but market participants have rarely discussed about that.
- Because of the opportunities of arbitrage, such “anomalies” are only a temporary appearance.

▶ **The suspension of currency hedging is a tactical decision. As the CHF is a traditional safe haven, currency risk can be substantial during tail events. Therefore, it is very difficult to weight the cost savings to the additional risk.**

Conclusion

- After the suspension of the fixed minimum rate, **gains and losses** are again **equally probable**.
- From a strategic view, **foreign currency hedging** seems to be appropriate (risk reduction without giving up return).
- Prices of forward exchange rates for hedging have widely **normalized**. The interest rate differential is higher as during a period with a fixed minimum rate.
- The **specific hedging-quota** should be set considering the liabilities and the entire portfolio (ALM) of a pension fund.
- As the CHF is a traditional safe haven, currency risk can be substantial during **tail events**.

Contact

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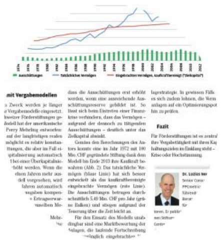

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