

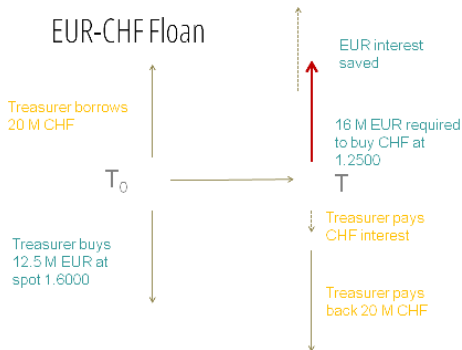
## Exit Strategies for a Sick Floan

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Börsen-Team  
TU Darmstadt, 7 June 2017

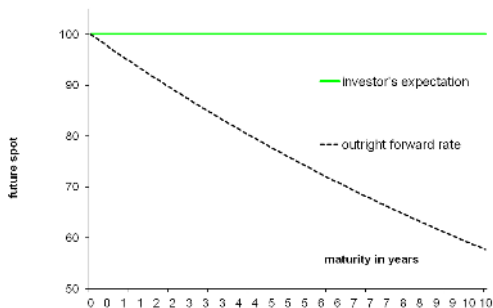


## Floan: Foreign Currency Loan



## Mrs. Watanabe and Mr. Penny

## Carry Trade



- Mrs. Watanabe invests in a high yield currency (AUD-JPY)
- Mr. Penny borrows in a low yield currency (EUR-CHF)

# EUR-CHF recovery after 15 January 2015

EUR-CHF EOD rates 2015



After the SNB removed the guarantee level of EUR-CHF 1.2000 on 15 January 2015, many floans in CHF that had already gone bad in last few years caused another substantial loss for municipalities and corporates in many countries in Europe.

## Product and Market

**Contract:** EUR based treasurer has a legacy floan of 20 M CHF expiring in 6 months, horizon 23 May 2015, Spot date 27 May 2015, expiry 25 November 2015, delivery 27 November 2015 [Wystup, 2016b]

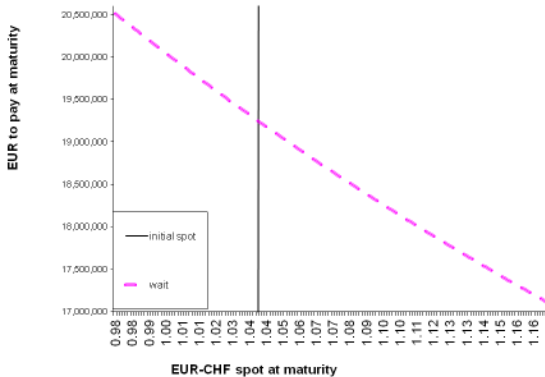
**Market:** EUR-CHF spot 1.0400 on 23 May 2015. Other market data: swap points -0.00510, forward 1.0349, EUR deposit 0.055%, CHF deposit -0.906%, ATM 8.950%, 25-delta risk reversal -2.80% favoring EUR puts/CHF calls, butterfly 0.45%.

## Exit Strategies for a Sick Floan

- ① Strategy 0: do nothing – wait for better times
- ② Strategy 1: outright forward
- ③ Strategy 2: call on the foreign currency
- ④ Strategy 3: vanilla zero cost structure
- ⑤ Strategy 4: exotics zero cost structure
- ⑥ Strategy 5: sue the bank
- ⑦ Strategy 6: reduce coupon further by trading a currency related swap and then sue the bank

## Strategy 0 - Wait for Better Times

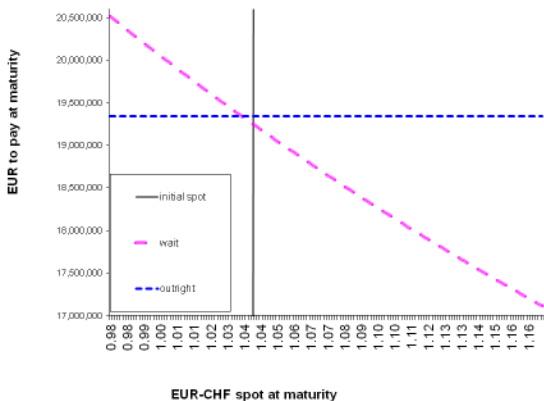
EUR-CHF exit strategies compared



- EUR required in 6 M unknown
- Unlimited risk if EUR-CHF drops further
- Illegal: speculation – under new laws

## Strategy 1 - Outright Forward

EUR-CHF exit strategies compared

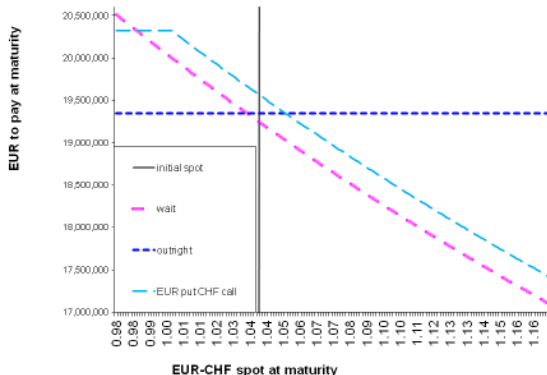


- Treasurer trades an outright forward contract at zero cost at 1.0340
- requires EUR 19,342,360
- no participation in rising EUR-CHF



## Strategy 2 - EUR Put CHF Call

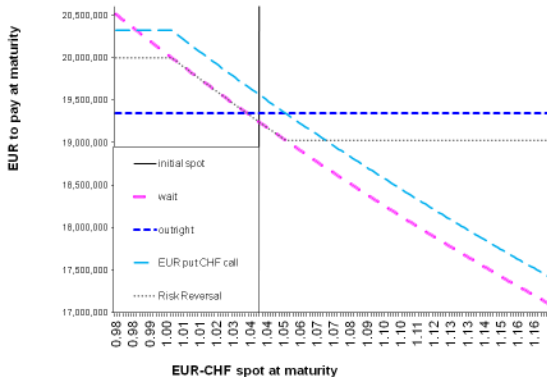
EUR-CHF exit strategies compared



- EUR put CHF call strike 1.0000 for EUR 319,400
- worst case EUR 20 M
- unlimited participation in rising EUR-CHF

## Strategy 3 - Risk Reversal (zero cost)

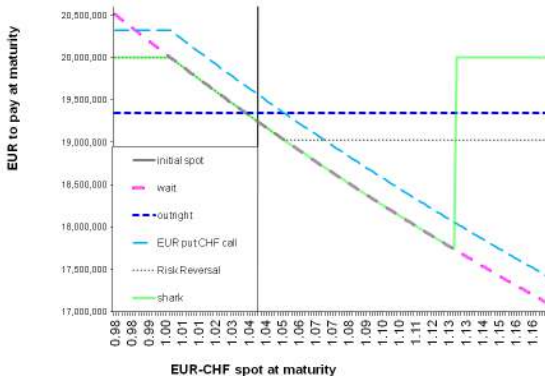
EUR-CHF exit strategies compared



- long CHF call EUR put at 1.0000 requires EUR 20 M
- short EUR call CHF put 1.0510 requires only EUR 19,029,495
- Not very attractive as EUR/CHF RR favors EUR calls

## Strategy 4 - Shark Forward

EUR-CHF exit strategies compared



- worst case 1.0000 EUR-CHF requires EUR 20 M
- bonus level 1.1280
- best case 1.1279 requires only EUR 17,732,068: save EUR 2,267,932 compared to the worst case

## Legal Limitations

HESSEN



- “risk minimization” required, but undefined
- “speculation prohibited” – *devilatives* concept
- floans only if FX risk is hedged
- supervising ministry silent

The only solution to the problem in a society with developed financial markets is

Education Education Education

## Recap of the Outcome

Treasurer's choice: strategy 1: outright forward<sup>1</sup>

FAZ recommendation: strategy 0: wait: actually illegal / hindsight view

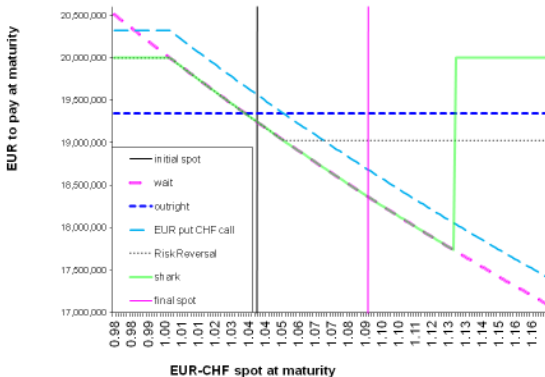
Best strategy: strategy 4: shark: saves about EUR 1M compared to strategy 1

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<sup>1</sup><http://www.wiesbadener-tagblatt.de/lokales/rheingau/landkreis/rheingau-taunus-kreis-steigt-aus-krediten-in-schweizer-franken-aus.15330402.htm>

## Strategies revisited

EUR-CHF exit strategies compared



- last quarter of 2015 the EUR-CHF recovered
- spot ref 1.0900 in November 2015
- shark is superior: least EUR amount required with worst case protection at zero cost

# Outlook

- Public sector CHF floans in Germany mostly cleaned up
- Private sector CHF floans in Poland, Hungary still alive
- Other sick floans are expected to arise in many of the EM currencies including INR, CNH, BRL, ZAR.

## Resources

### Publications:

<https://www.uantwerpen.be/en/staff/uwepeter-wystup/publications/>  
FX Options and Structured Products, 2nd Edition [Wystup, 2017]  
Risiken begrenzen, Chancen nutzen – Vier Strategien zum Umgang mit  
Fremdwährungskrediten [Wystup, 2016b]  
Brexit-Risiko erfordert Absicherung von Pfund-Einnahmen [Wystup, 2016a]

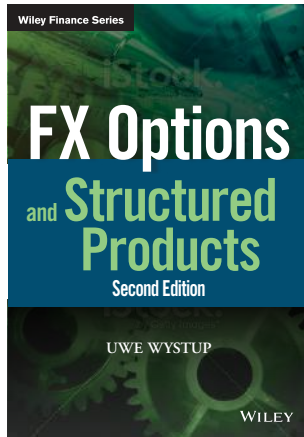
MathFinance Software (MFVal, MIRCL):  
<https://mathfinance.com/products/>

18th Frankfurt MathFinance Conference:  
16-17 April 2018  
<https://www.mathfinance.com>





## Solution to all Problems





Wystup, U. (2016a).  
Brexit-Risiko erfordert Absicherung von Pfund-Einnahmen.  
*Börsenzeitung*, Vol 41 (1 March):19.



Wystup, U. (2016b).  
Risiken begrenzen, Chancen nutzen – Vier Strategien zum Umgang mit  
Fremdwährungskrediten.  
*Der Neue Kämmerer*, Vol 1 (March 1):7.



Wystup, U. (2017).  
*FX Options and Structured Products, 2nd Edition*.  
Wiley.

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