

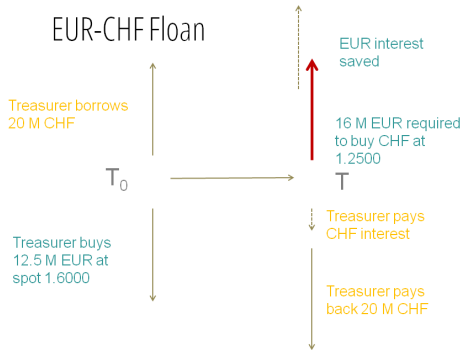
Exit Strategies for a Sick Floan

Uwe Wystup, MathFinance AG
uwe.wystup@mathfinance.com

Börsen-Team
TU Darmstadt, 7 June 2017

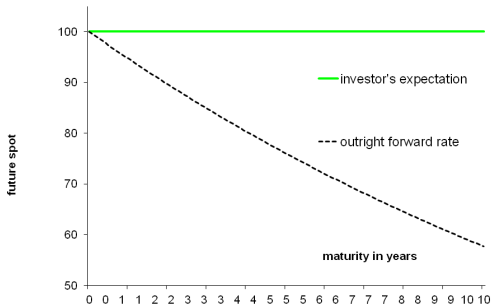


Floan: Foreign Currency Loan



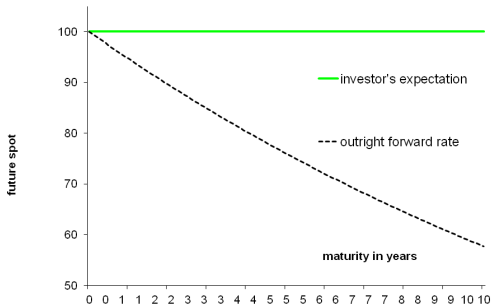
Mrs. Watanabe and Mr. Penny

Carry Trade



Mrs. Watanabe and Mr. Penny

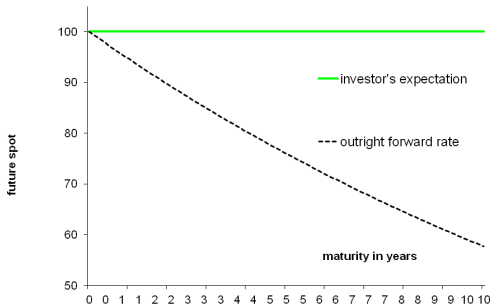
Carry Trade



- Mrs. Watanabe invests in a high yield currency (AUD-JPY)

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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]

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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%.

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- ⑤ Strategy 4: exotics zero cost structure

Exit Strategies for a Sick Floan

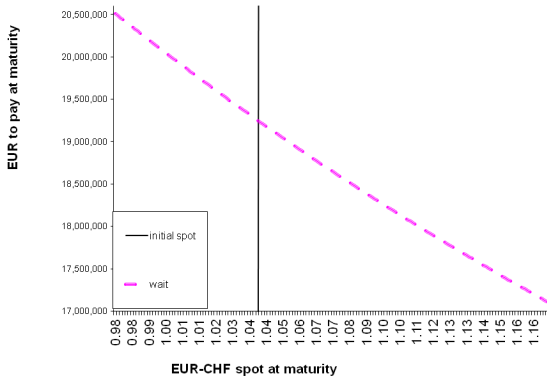
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- ⑥ Strategy 5: sue the bank

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

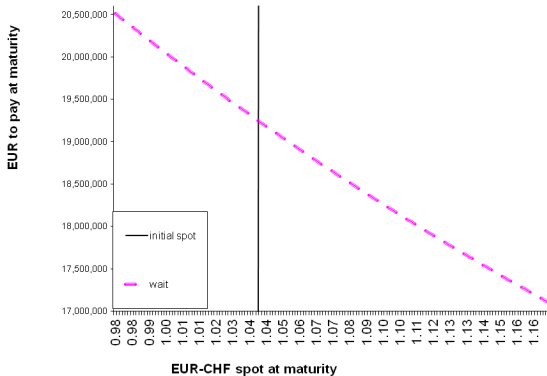
Strategy 0 - Wait for Better Times

EUR-CHF exit strategies compared



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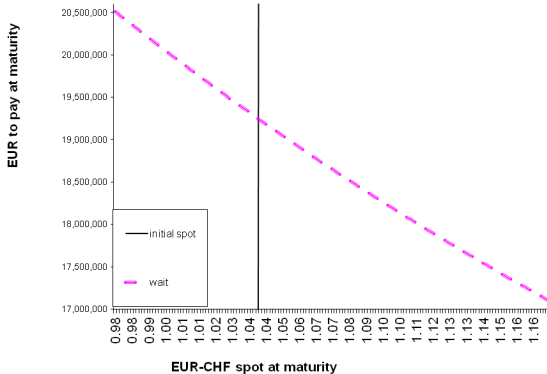
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- EUR required in 6 M unknown

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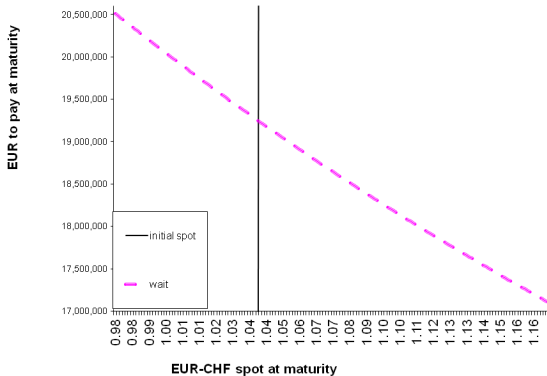
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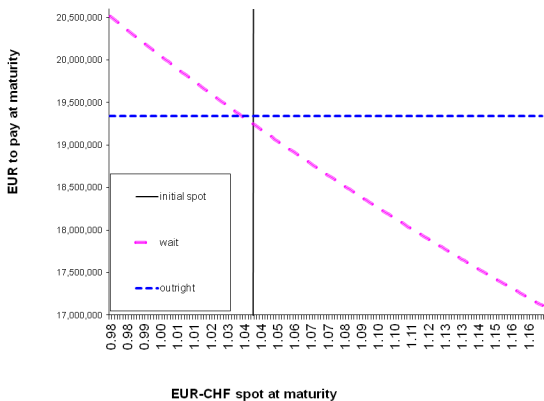
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- EUR required in 6 M unknown
- Unlimited risk if EUR-CHF drops further
- Illegal: speculation – under new laws

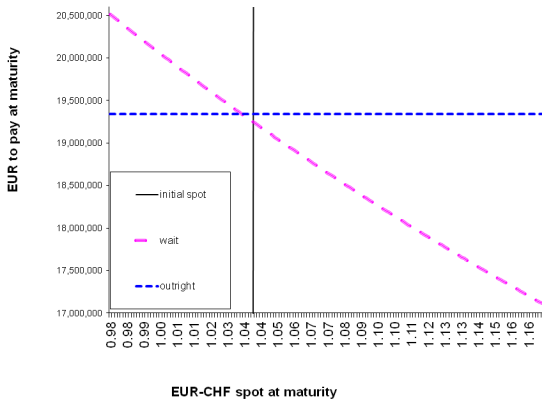
Strategy 1 - Outright Forward

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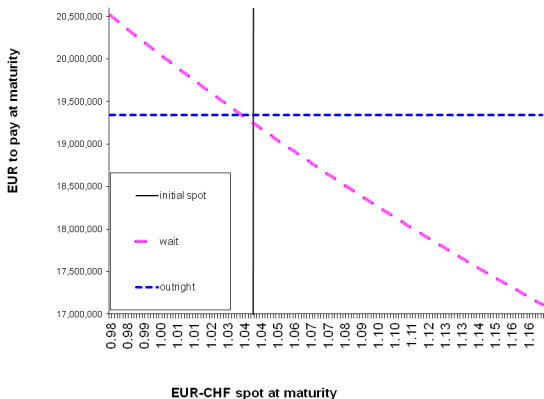
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- Treasurer trades an outright forward contract at zero cost at 1.0340

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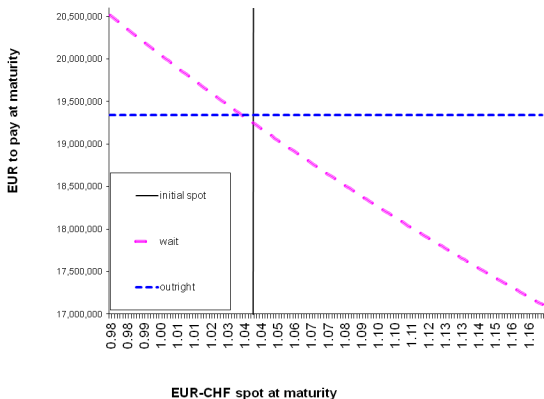
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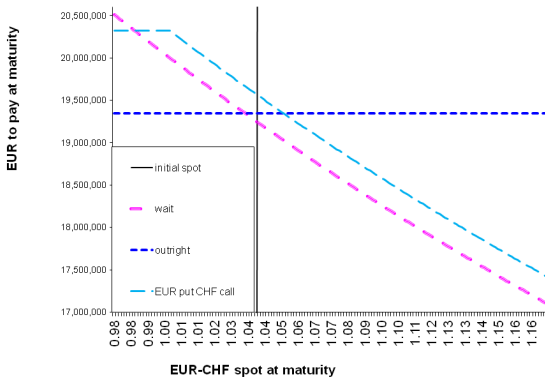
EUR-CHF exit strategies compared



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

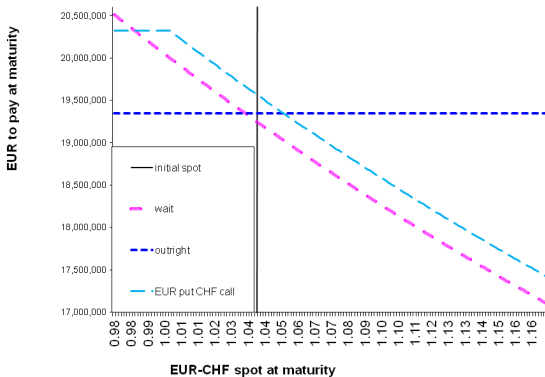
Strategy 2 - EUR Put CHF Call

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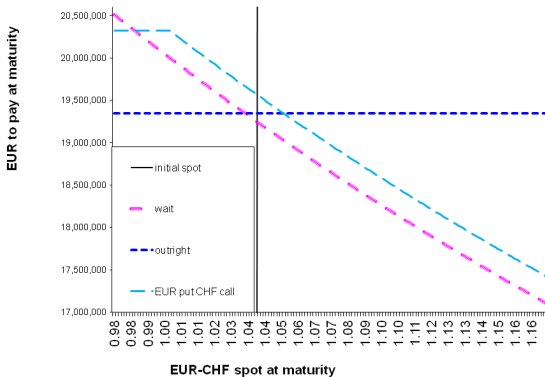
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- EUR put CHF call strike 1.0000 for EUR 319,400

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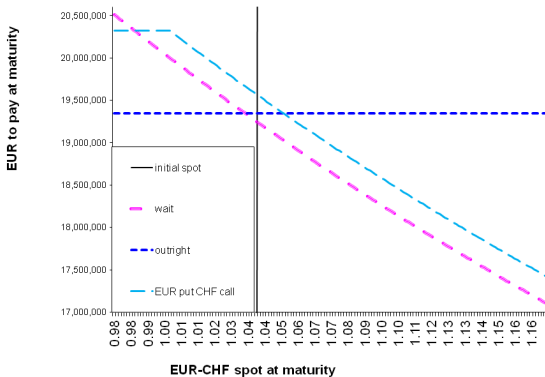
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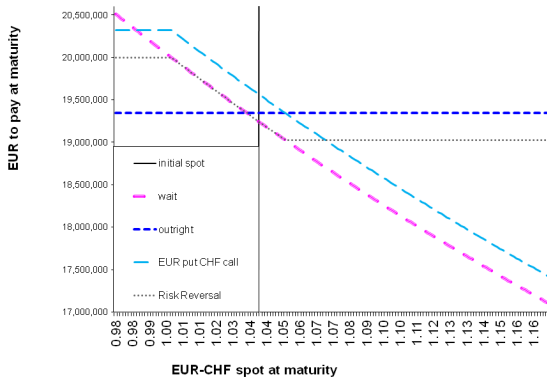
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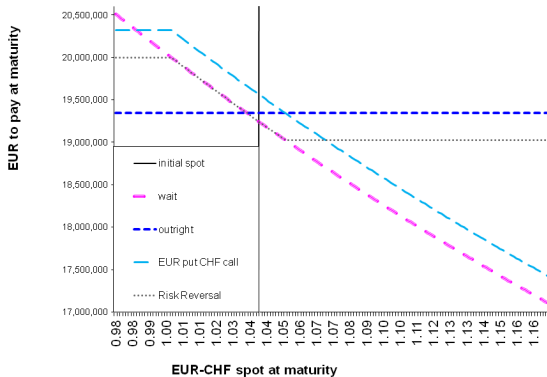
Strategy 3 - Risk Reversal (zero cost)

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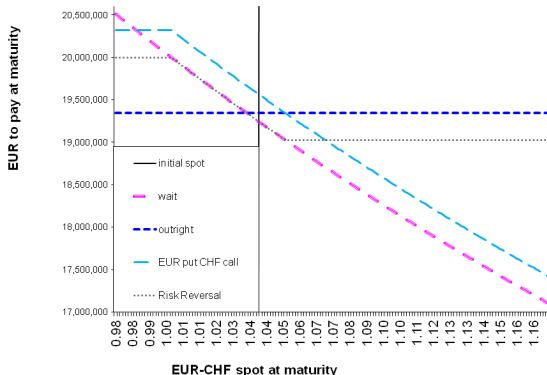
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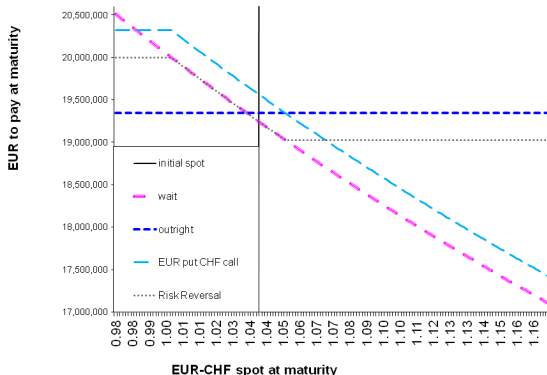
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- short EUR call CHF put 1.0510 requires only EUR 19,029,495

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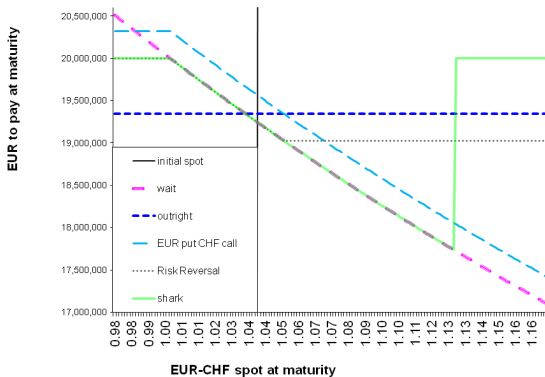
EUR-CHF exit strategies compared



- long CHF call EUR put at 1.0000 requires EUR 20 M
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- Not very attractive as EUR/CHF RR favors EUR calls

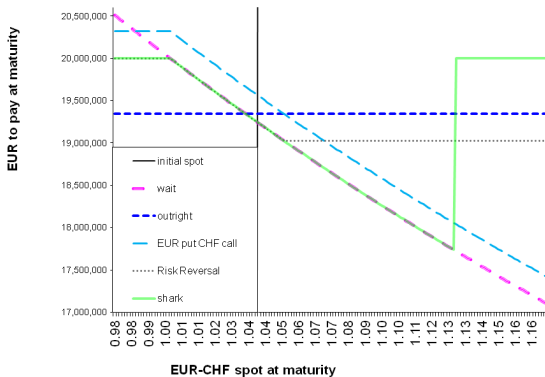
Strategy 4 - Shark Forward

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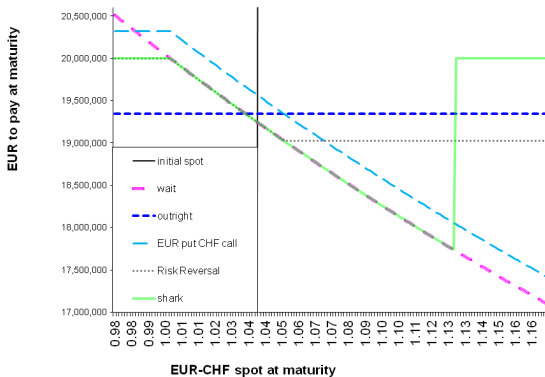
EUR-CHF exit strategies compared



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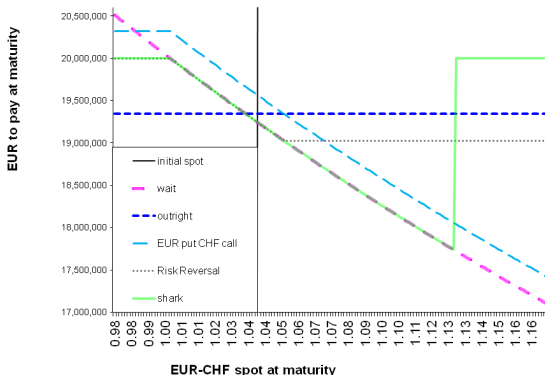
EUR-CHF exit strategies compared



- worst case 1.0000 EUR-CHF requires EUR 20 M
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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



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HESSEN



- “risk minimization” required, but undefined

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

Education Education Education

Recap of the Outcome

¹http://www.wiesbadener-tagblatt.de/lokales/rheingau/landkreis/rheingau-taunus-kreis-steigt-aus-krediten-in-schweizer-franken-aus_15330402.htm

Recap of the Outcome

Treasurer's choice: strategy 1: outright forward¹

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

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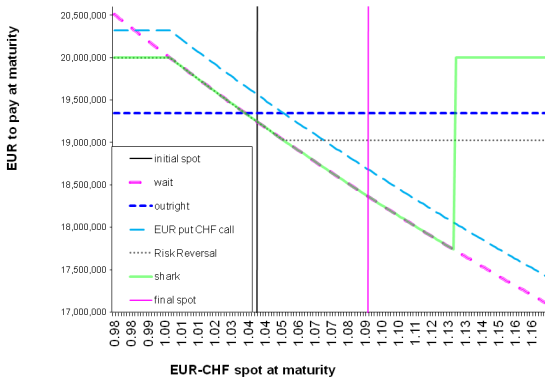
FAZ recommendation: strategy 0: wait: actually illegal / hindsight view

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

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

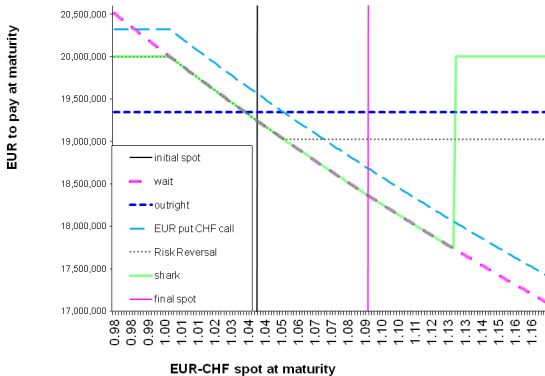
Strategies revisited

EUR-CHF exit strategies compared



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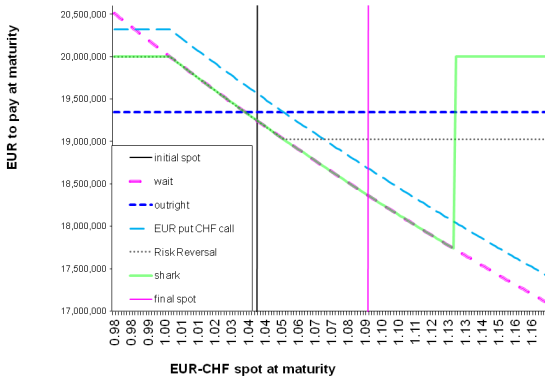
EUR-CHF exit strategies compared



- last quarter of 2015 the EUR-CHF recovered

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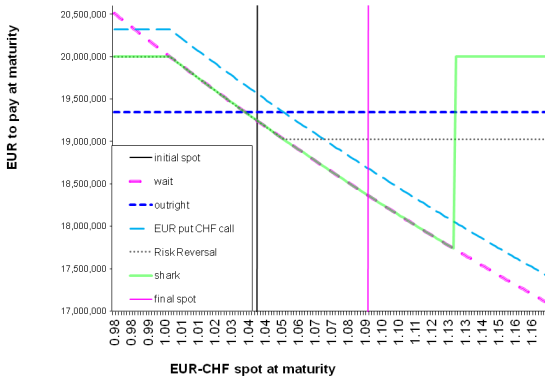
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- spot ref 1.0900 in November 2015

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

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- 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]

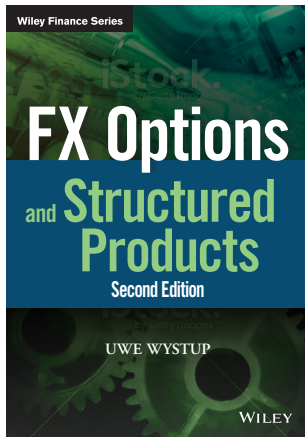
MathFinance Software (MFVal, MIRCL):
<https://mathfinance.com/products/>

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

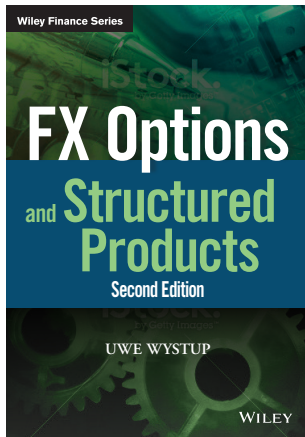


Solution to all Problems

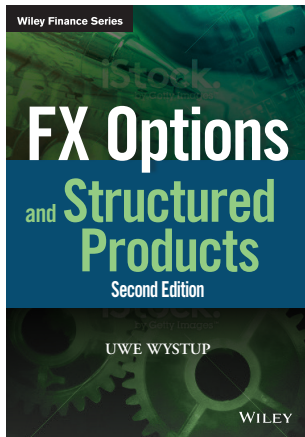
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Wystup, U. (2016a).
Brexit-Risiko erfordert Absicherung von Pfund-Einnahmen.
Börsenzeitung, Vol 41 (1 March):19.



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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