Exit Strategies for a Sick Floan

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Börsen-Team
TU Darmstadt, 7 June 2017
Floans: Foreign Currency Loan

**EUR-CHF Floan**

- **T₀**
  - Treasurer borrows 20 M CHF
  - Treasurer buys 12.5 M EUR at spot 1.6000

- **T**
  - EUR interest saved
  - 16 M EUR required to buy CHF at 1.2500
  - Treasurer pays CHF interest
  - Treasurer pays back 20 M CHF
Mrs. Watanabe and Mr. Penny

Carry Trade

- investor’s expectation
- outright forward rate

future spot vs. maturity in years
Floans

Carry Trade Incentive
Case Study: EUR-CHF Market
Product and Market
Exit Strategies for a Sick Floan
Outlook
Resources

Mrs. Watanabe and Mr. Penny

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

Carry Trade

- investor's expectation
- outright forward rate

future spot

maturity in years

0 0 1 2 3 4 5 6 7 8 9 10

50 60 70 80 90 100
Mrs. Watanabe and Mr. Penny

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

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
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2. Strategy 1: outright forward
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1. Strategy 0: do nothing – wait for better times
2. Strategy 1: outright forward
3. Strategy 2: call on the foreign currency
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4. Strategy 3: vanilla zero cost structure
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6. Strategy 5: sue the bank
Exit Strategies for a Sick Floan

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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**

- **initial spot**
- **wait**

<table>
<thead>
<tr>
<th>EUR-CHF spot at maturity</th>
<th>EUR to pay at maturity</th>
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</thead>
<tbody>
<tr>
<td>0.98</td>
<td>17,000,000</td>
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<tr>
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Strategy 0 - Wait for Better Times

- EUR required in 6 M unknown
Strategy 0 - Wait for Better Times

- EUR required in 6 M unknown
- Unlimited risk if EUR-CHF drops further
Strategy 0 - Wait for Better Times

- EUR required in 6M unknown
- Unlimited risk if EUR-CHF drops further
- Illegal: speculation – under new laws
Strategy 1 - Outright Forward

EUR-CHF exit strategies compared

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

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Strategy 1 - Outright Forward

- Treasurer trades an outright forward contract at zero cost at 1.0340
Strategy 1 - Outright Forward

- Treasurer trades an outright forward contract at zero cost at 1.0340
- requires EUR 19,342,360
Strategy 1 - Outright Forward

- 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 to pay at maturity**

- **initial spot**
- **wait**
- **outright**
- **EUR put CHF call**

**EUR-CHF spot at maturity**

- 0.98
- 0.99
- 1.00
- 1.01
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Strategy 2 - EUR Put CHF Call

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

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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
Strategy 2 - EUR Put CHF Call

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

EUR to pay at maturity

EUR-CHF spot at maturity
Strategy 3 - Risk Reversal (zero cost)

EUR-CHF exit strategies compared

EUR to pay at maturity vs. EUR-CHF spot at maturity

- Initial spot
- Wait
- Outright
- EUR put CHF call
- Risk Reversal

Not very attractive as EUR/CHF RR favors EUR calls.
Strategy 3 - Risk Reversal (zero cost)

- long CHF call EUR put at 1.0000 requires EUR 20 M
Strategy 3 - Risk Reversal (zero cost)

- 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

EUR-CHF exit strategies compared
Strategy 3 - Risk Reversal (zero cost)

- 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
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Strategy 4 - Shark Forward

EUR-CHF exit strategies compared

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<thead>
<tr>
<th>Strategy</th>
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<tr>
<td>Worst case</td>
<td>EUR 20 M</td>
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<tr>
<td>Bonus level</td>
<td>EUR 1.1280</td>
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<td>Best case</td>
<td>EUR 17,732,068</td>
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<td>Save</td>
<td>EUR 2,267,932</td>
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Strategy 4 - Shark Forward

EUR-CHF exit strategies compared

- worst case 1.0000 EUR-CHF requires EUR 20 M
Strategy 4 - Shark Forward

EUR-CHF exit strategies compared

- worst case 1.0000 EUR-CHF requires EUR 20 M
- bonus level 1.1280
Strategy 4 - Shark Forward

- 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

The only solution to the problem in a society with developed financial markets is education. Education is the key to minimizing risks and speculations, especially when it comes to derivatives and the use of floans. Supervising ministries must remain silent on these matters, as the only way to ensure that the markets function properly is through continuous education and awareness.

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Legal Limitations

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

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Recap of the Outcome

Treasurer’s choice: strategy 1: outright forward\(^1\)

\(^1\)http://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 forward\(^1\)
FAZ recommendation: strategy 0: wait: actually illegal / hindsight view

\(^1\)http://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 forward**

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

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

Strategies revisited

EUR-CHF exit strategies compared

- initial spot
- wait
- outright
- EUR put/CHF call
- Risk Reversal
- shark
- final spot

EUR to pay at maturity

EUR-CHF spot at maturity
last quarter of 2015 the EUR-CHF recovered
Strategies revisited

- Last quarter of 2015 the EUR-CHF recovered
- Spot ref 1.0900 in November 2015

EUR-CHF exit strategies compared

- Initial spot
- Wait
- Outright
- EUR put CHF call
- Risk Reversal
- Shark
- Final spot

EUR to pay at maturity vs. EUR-CHF spot at maturity
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
Public sector CHF floans in Germany mostly cleaned up
Outlook

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

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
Solution to all Problems

FX Options and Structured Products
Second Edition

UWE WYSTUP

WILEY
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Risiken begrenzen, Chancen nutzen – Vier Strategien zum Umgang mit Fremdwährungskrediten. 

*FX Options and Structured Products, 2nd Edition*. 
Wiley.
carry trade, 3
floan, 2
outright forward, 20
risk reversal, 28
shark forward, 32