



Using Forward
Contracts

P. Sercu,
International

*Finance: Theory into
Practice*

Overview

Chapter 5

Using Forward Contracts in International Financial Management



Overview

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Real-World Practical Details

Reducing Default Risk
Bid-Ask Spreads

Using Forwards (1): Arbitrage

Synthetic Rates are Worst Possible Combinations
Bounds linking Synth and Direct Rates

Using Forwards (2): Hedging

What is Exposure?
Hedging Contractual Exposure

Using Forwards (3): Speculation

Using Forwards (4): Minimizing bid-ask spreads

Using Forwards (5): Swapping loans or deposits

Swapping for Tax Reasons
Swapping to avoid excess risk spreads
Swapping to Disguise Mutual Secured Loans

Using Forward Rates (6): Choices & Decisions

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◇ Right of Offset

- ▷ if one party defaults, then the other party cannot be forced to fulfill its own part of the deal
- ▷ if that other party still sustains losses, the defaulting party remains liable for these losses

⇒ Worst possible impact for bank (on bank's purchase) at T is $-S_T + F_{t_0, T}$, not $-S_T$

◇ Vetting and security

- ▷ bank preferably deals with known customers,
- ▷ asks security, or
- ▷ refuses if necessary

◇ Short Maturities

- ▷ bank offers a short-time contract & promises to roll it over
- ▷ at roll-over date, bank may change its mind



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Adjusting the diagram for spreads

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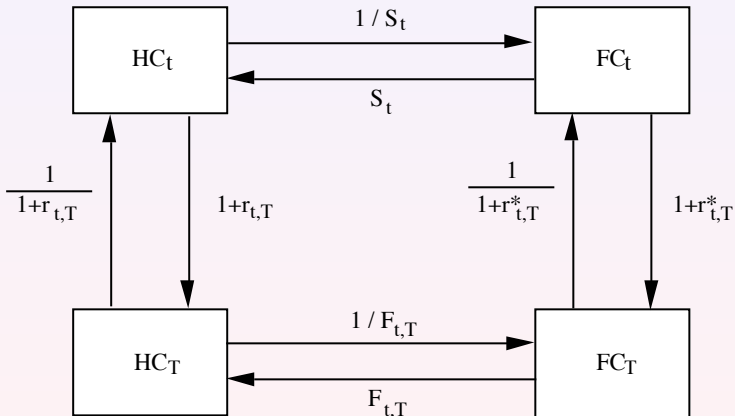
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Add “bid” or “ask” superscripts:





Swap Rates with Spreads—the 2nd Law

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Termijnkoersen

	1 maand	2 maand	3 maand	6 maand	12 maand						
Amerikaanse dollar	19.20	19.28	37.30	37.50	58.82	59.07	115.00	115.60	229.60	231.00	
Australische dollar	46.00	46.60	84.20	85.10	128.00	130.00	239.00	242.00	464.00	468.00	
Brits pond	13.40	13.60	24.20	24.50	36.50	36.80	65.70	66.40	121.00	123.00	
Japanse Yen	-29.10	-28.80	-57.20	-56.80	-89.10	-88.60	-177.00	-176.00	-370.00	-366.00	
Nieuw-Zeelandse dollar	80.10	81.10	148.00	149.00	226.00	228.00	425.00	429.00	818.00	829.00	
Zweedse Kroon	-52.10	-47.80	-132.00	-126.00	-189.00	-181.00	-372.00	-356.00	-655.00	-607.00	
Zwitserse frank	-21.40	-21.10	-39.70	-38.90	-60.00	-59.70	-114.00	-111.00	-211.00	-205.00	

Bron: Dexia

LIBOR

Spot rate	30d
1.1776	4.20
1.5988	5.55
0.6846	4.81
139.7800	0.03
1.7035	7.48
9.5162	1.60
1.5491	0.80
	2.335

eur

Note how swap spreads widen the forward spread:



Second Law: spread rises with $T - t$, via effect on

- [interaction between default and bank's worst possible loss:]
 - probability of default: ...
 - worst possible loss to bank, given default: ...
- depth of market: ...



Swap Rates with Spreads—the 2nd Law

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Ripped Off Again
Bounds

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Synthetic Rates: Ripped Off—Again

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Use #1: Arbitrage

Ripped Off Again

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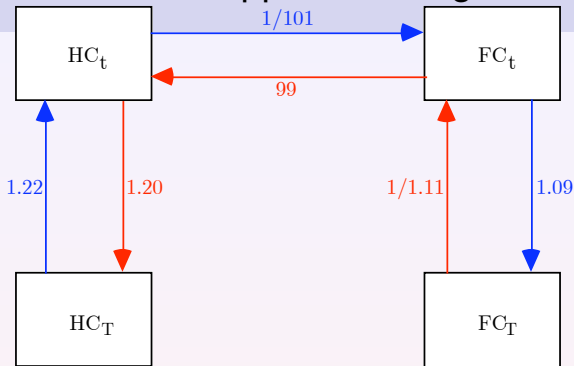
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▷ Synth sale: $HC_T = FC_T \times \frac{1}{1.11} \times 99 \times 1.20 = FC_T \times 107.027$

$$\Rightarrow \text{synth } F \text{ bid} = \frac{HC_T}{FC_T} = 99 \frac{1.20}{1.11} = 107.027$$

▷ Synth purchs: $FC_T = HC_T \times \frac{1}{1.22} \times \frac{1}{101} \times 1.09 = HC_T \times 0.00884596$

$$\Rightarrow \text{synth } F \text{ ask} = \frac{FC_T}{HC_T} = 101 \frac{1.22}{1.09} = 113.046$$



Arb & Sh-Ar Bounds — Synth & Direct F s

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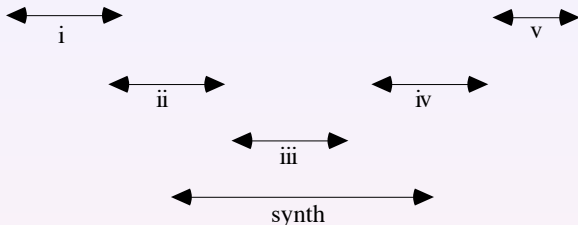
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i to v indicate (often mutually incompatible) conceivable direct spreads. Compare each of them separately to the synthetic, and list the conclusions:

- On the basis of no-arbitrage arguments:
- On the basis of shopping-around arguments:
- Bottom line:

Note: the synth spread rises with time to maturity, thus providing room for bigger direct spreads (see *infra*)

Arb & Sh-Ar Bounds — Synth & Direct F s

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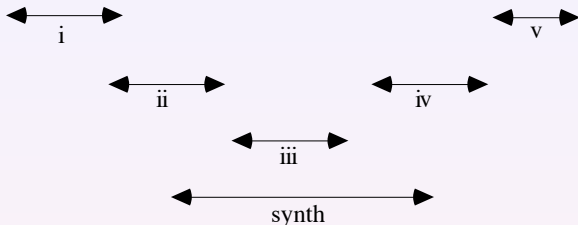
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◇ **General:** a sensitivity of a financial variable V_T to the exchange rate S_T :

- ▷ not the (conditional) variance of S_T
- ▷ but *eg* a regression coefficient, as in

$$\tilde{V}_T = A_{t,T} + B_{t,T}\tilde{S}_T + \tilde{e}_{t,T},$$

- ▷ or a partial derivative, $\frac{\partial V_T}{\partial S_T}$.

◇ **Examples**

- ▷ FC-denominated contract, e.g. $\tilde{V}_T = 10,000\tilde{S}_T$; $B_{t,T} = \dots$
- ▷ an option's "delta"



What is Exposure?

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What is Exposure? (2)

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◇ Contractual exposures grouped by date and currency

Example

(Commercial contracts in roman, financial in italic)	30 days		60 days	
	in	out	in	out
a. A/R:	100,000	—	2,200,000	—
b. Long-term sales contracts:	0	—	0	—
c. <i>Expiring deposits</i> :	3,000,000	—	0	—
d. <i>Forward purchases</i> :	0	—	0	—
e. A/P:	—	2,300,000	—	1,000,000
f. Long-term purchase contracts:	—	0	—	0
g. <i>Loan due</i> :	—	0	—	2,300,000
h. <i>Forward sales</i> :	—	0	—	0
net flow	+800,000		-1,100,000	

◇ Non-contractual exposures

- exposure not found anywhere in accounting system or some contract—eg competitiveness of a plant determines its value
- exposure has to be computed from a cross-section of possible future states of the world
- to be discussed in Part III



Using Forwards (2): Hedging

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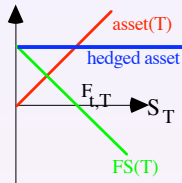
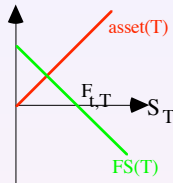
Use #4: Minimizing bid-ask spreads

Use #5: Swapping loans or deposits

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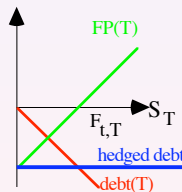
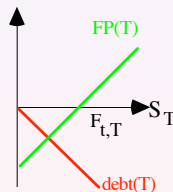
Hedging a FC asset (long position)

- asset (FC1)
- forward sale $F_{t,T} - S_T$
- sum:
$$\frac{S_T - S_T}{F_{t,T}}$$



Hedging a FC liability (short position)

- liability (FC1)
- forw purchase $S_T - F_{t,T}$
- sum:
$$\frac{-S_T - (-S_T)}{-F_{t,T}}$$



Note the two-edged-sword effect: both “bad” and “good” uncertainties are gone.



Using Forwards (2): Hedging

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Hedging Contractual Exposure

Use #3: Speculation

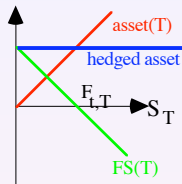
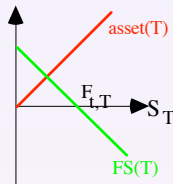
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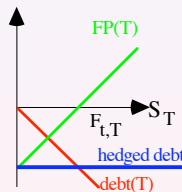
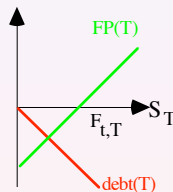
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Issues in Contractual-Exposure Hedging

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◇ **Aggregating exposures over time**

- ▷ **Why?** If flows are +1000,000 on Jan 5 and -800,000 on Jan 6: hedging just +200,000 is much cheaper than selling forward 1000,000 and buying forward 800,000.
- ▷ If time differences become too big, an interest-risk issue arises.
- ▷ Can be solved by (i) keeping time buckets narrow; (ii) using FF and FRAs (interest rate forwards); (iii) duration matching.

◇ **Credit risk**

- ▷ If default arises, hedge has to be reversed—risky!
- ▷ If necessary, buy credit insurance (Insurance Cy; factor; banks: L/Cs)

◇ **Value hedging v cash-flow hedging**

- ▷ value hedging is complicated: (i) interest exposure; (ii) need to continuously update all hedges



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Speculation (1)

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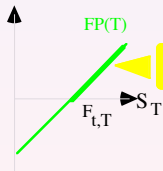
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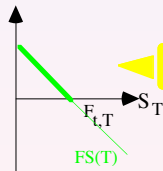
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- ▷ so you “see” an extra positive or negative return that makes you give up some diversification.
- ▷ You must be very good, or at least think so.

◇ Speculation on the Future Spot Rate



speculating on a high S



speculating on a low S

- ▷ *à la hausse* (long): F “too low”, $E_{you}(\tilde{S}_T - F_{t,T})$ big!
- ▷ *à la baisse* (short): F “too high”, $E_{you}(F_{t,T} - \tilde{S}_T)$ big!



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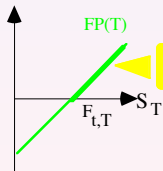
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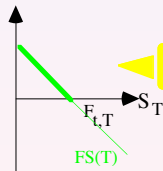
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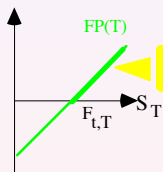
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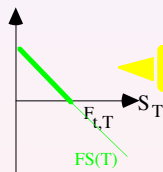
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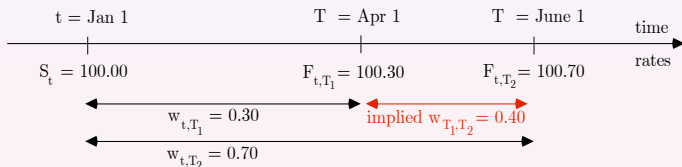
Use #5: Swapping loans or deposits

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- ▷ We compare market's risk-adjusted expectation with ours, and act when the deviation seems excessive
- ▷ The F 's on, say, $t = \text{Jan 1}$ for delivery at $T_1 = \text{April 1}$ or $T_2 = \text{June 1}$ —imply a “forward-forward” (FF) CEQ about the change April 1–June 1, ...
- ▷ ... and we think they're way off.



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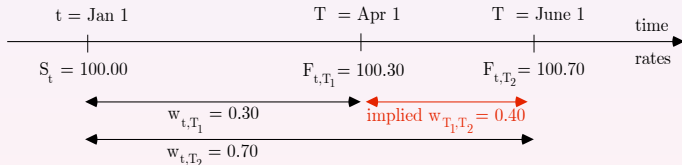
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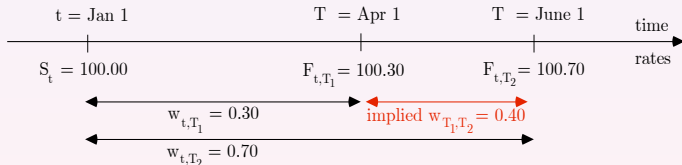
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- ▷ This implied change $F_{t,Ju} - F_{t,Ap}$ is of course the same as the FF spread in swap rates, $w_{t,Ju} - w_{t,Ap}$; so we bet on a changing interest differential
- ▷ How to speculate on this?

Speculating on a rise in the swap rate

$$\begin{array}{r}
 \text{Speculate on rise in } F \text{ by } T_1: \bar{F}_{T_1, T_2} - F_{t, T_2} \text{ ie} \\
 \text{Hedge away the } \bar{S}_{T_1} \text{ risk} \\
 \hline
 \text{TOTAL:}
 \end{array}
 \qquad
 \begin{array}{r}
 \bar{w}_{T_1, T_2} + \bar{S}_{T_1} - F_{t, T_2} \\
 F_{t, T_1} - \bar{S}_{T_1} \\
 \hline
 \bar{w}_{T_1, T_2} + [F_{t, T_1} - F_{t, T_2}] \\
 = \bar{w}_{T_1, T_2} + [w_{t, T_1} - w_{t, T_2}]
 \end{array}$$

Idem—via SF & FF Swaps

ingredient	action at t (Jan)	action at T_1 (Apr)
bet on $F_{Apr} \uparrow$	buy forward Jun	sell forward Jun
hedge S_{Apr}	sell forward Apr	buy spot
Combined:	forward-forward swap "out"	spot-forward swap "in"



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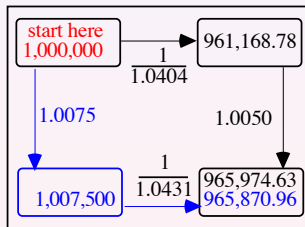
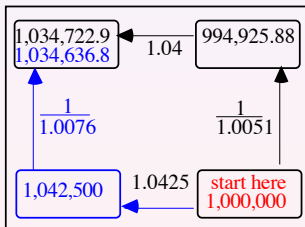
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Example: Let (USD/EUR) spot $1.0400 - 1.0404$
 (USD/EUR) 30 days $1.0425 - 1.0431$
 i (simple, p.a.) 30 days $9 - 9.12\%$
 i^* (simple, p.a.) 30 days $6 - 6.12\%$

A: export financing

B: investing in FX





Ms Takeshita's Problems

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- ▶ A foreign customer has promised a large amount of USD (= FC), but today the Club needs JPY cash to pay its workers and suppliers and does not like the exchange risk either. Should the Club borrow dollars or yens?
- ▶ The next day there are excess JPY liquidities that should be parked, risk-free. Should HG&CC go for a Yen deposit, or a swapped dollar one?
- ▶ Two days later the Club wants to earmark part of its JPY cash to settle a USD liability expiring in six months. Should they keep yens and buy forward, or move into dollars right away?
- ▶ One week later, HG&CC receives USD from a customer, and orders new irons payable in USD 180d. Should the current USD be deposited and used later on to settle the invoice?

DATA—interest rates are *p.a.*, simple:

spot	JPY/USD 99.95 - .05 (spread 0.10)	180d	JPY/USD 98.88 - 16 (spread 0.18)
JPY, 180d	1.90 - 2.10% (0.95 - 1.05% return)	USD, 180d	3.90 - 4.10% (1.95 - 2.05% return)



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problem; start, end	alternatives & output
finance FC A/P (FC_T to HC_t)	* via FC_t : $\frac{1}{1.0205} \times 99.95 = 97.942185$ ♡♡ * via HC_T : $98.88 \times \frac{1}{1.0105} = 97.852548$
HC deposit (HC_t to HC_T)	* direct: 1.009500 ♡♡ * synthetic: $\frac{1}{100.05} \times 1.0195 \times 98.88 = 1.0075778$
invest in FC (HC_t to FC_T)	* via FC_t : $\frac{1}{100.05} \times 1.0195 = 0.010189905$ ♡♡ * via HC_T : $1.0095 \times \frac{1}{99.16} = 0.01018051$
park FC FC_t to FC_T	* direct: 1.0195 ♡♡ * synthetic: $99.95 \times 1.0095 \times \frac{1}{99.16} = 1.01754260$

NOTES

- Don't mix up vending-machine INPUT / OUTPUT with DATA / SOLUTION
- Direct deposits yield more than swapped ones—surprised?



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Use #6: Choices & Decisions

problem; start, end	alternatives & output
finance FC A/P (FC_T to HC_t)	* via FC_t : $\frac{1}{1.0205} \times 99.95 = 97.942185$ ♥♥ * via HC_T : $98.88 \times \frac{1}{1.0105} = 97.852548$
HC deposit (HC_t to HC_T)	* direct: 1.009500 ♥♥ * synthetic: $\frac{1}{100.05} \times 1.0195 \times 98.88 = 1.0075778$
invest in FC (HC_t to FC_T)	* via FC_t : $\frac{1}{100.05} \times 1.0195 = 0.010189905$ ♥♥ * via HC_T : $1.0095 \times \frac{1}{99.16} = 0.01018051$
park FC FC_t to FC_T	* direct: 1.0195 ♥♥ * synthetic: $99.95 \times 1.0095 \times \frac{1}{99.16} = 1.01754260$

NOTES

- Don't mix up vending-machine INPUT / OUTPUT with DATA / SOLUTION
- Direct deposits yield more than swapped ones—surprised?



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Synthetic Rates are Worst Possible Combinations

Bounds linking Synth and Direct Rates

Using Forwards (2): Hedging

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Hedging Contractual Exposure

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- ◇ Swapping a **deposit** when capgains are not taxed: swap to **lower**-interest currency to convert taxable interest income into tax-free capgain.

	Invest INR 100		Invest MTL 1 and hedge	
initial investm		100.00	$1 \times 100 =$	100.00
final value	$100 \times 1.21 =$	121.00	$[1 \times 1.10] \times 110 =$	121.00
income		21.00		21.00
interest		21.00	$[1 \times 0.10] \times 110 =$	11.00
capgain		0	$110 - 100 =$	10.00
	Neutral taxes, 33.33%			
taxable		21.00		21.00
tax (33.33 %)		7.00		7.00
after-tax inc		14.00		14.00
	Only interest is taxed, 33.33%			
taxable		21.00		11.00
tax (33.33 %)		7.00		3.67
after-tax inc		14.00		17.33

- ◇ Swapping a **loan** when capgains are not taxed: swap to **higher**-interest currency to get more deductible interest expense in exchange for tax-free capgain.



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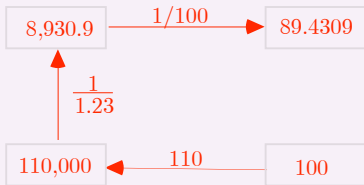
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◇ Why might HC- FC spreads be inconsistent?

- ▷ Loans offered by different banks; *eg* house bank knows you well, foreign bank fears adverse selection (winner's curse)
- ▷ Loans offered by same bank: sloppy homework

Example—data: INR at 21+2%, MTL at 10+2%; $S_t=100$, $F_{t,T}=110$.



You borrow at

$$\frac{100}{89.4309} - 1 = 11.82\%$$

...instead of 12%.



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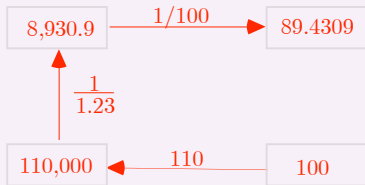
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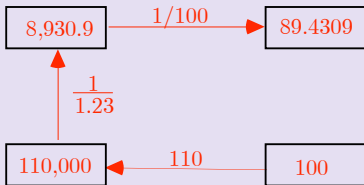
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How to compare spreads across currencies

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Rule: compare PV's (at r, r^*) of spreads,

$$\frac{\rho}{1+r} \text{ v } \frac{\rho^*}{1+r^*}.$$

Proof: FC and the swapped-HC loans are equivalent if

$$\underbrace{\frac{1}{1+r^*+\rho^*}}_{\text{proceeds FC loan}} \stackrel{\text{equiv}}{=} \underbrace{\frac{1}{1+r+\rho}}_{\text{proceeds HC loan}} \times \underbrace{\frac{F}{S}}_{\text{swap}},$$

$$= \frac{1}{1+r+\rho} \underbrace{\frac{1+r}{1+r^*}}_{\text{CIP}};$$

$$\Rightarrow \frac{1+r^*}{1+r^*+\rho^*} \stackrel{\text{equiv}}{=} \frac{1+r}{1+r+\rho};$$

$$\Rightarrow \frac{1+r^*+\rho^*}{1+r^*} \stackrel{\text{equiv}}{=} \frac{1+r+\rho}{1+r};$$

$$\Rightarrow 1 + \frac{\rho^*}{1+r^*} \stackrel{\text{equiv}}{=} 1 + \frac{\rho}{1+r}.$$

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◇ **Mutual secured loans?** 1966-style example

- ▷ BoE wants to borrow USD from BuBa, for intervention
- ▷ BuBa wants security: BoE should deposit an initially equivalent amount of GBP with BuBa (or in BuBa's BIS account)
- ▷ Mutual right of offset: if X is naughty, then Y can do so too, and X is still responsible for any remaining losses

Example— $S = \text{USD/GBP } 2.5$; $r_{\$} = .03$; $r_{\pounds} = 0.05$

	USD 100m borrowed at 3 percent	GBP 40m lent at 5 percent	
t	USD 100.0m	<GBP 40.0m>	= spot purchase of USD 100m at 2.5
T	<USD 103.0m>	GBP 42.0m	= forward sale of USD 103m at 2,4523

▷ Implied forward rate?

$$2,4523 = \frac{103}{42} = \frac{100}{40} \frac{1.03}{1.05} = S_t \frac{1 + r_{\$}}{1 + r_{\pounds}} = F! \quad (1)$$

▷ Right of Offset is automatic, in swap; no need to add clauses

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Why might one prefer the swap story?

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- ◇ **Two stories, one reality?** Write a swap contract or two mutual loans with Right of Offset:
 - ▷ same promised cash flows
 - ▷ same protection in case of default

- ◇ **Legal differences:** Swap contract states promised cash flows and RoO, but without using the words ...
 - ▷ “loan”
 - not on balance sheet, so ...
 - leaves unaffected D/E, Profits/Assets etc
 - requires less Basel capital
 - ▷ “security”
 - not mentioned in notes to balance sheet
 - no need to register the security or pledge
 - no conflicts with earlier seniority clauses, negative pledges, etc
 - ▷ “interest”
 - tax advantage, religious issues



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Why use parallel/Bk2Bk loans at all?

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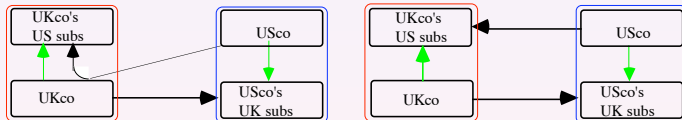
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Use #6: Choices & Decisions

◇ Secured loans

- ▷ Gorby's gold-backed loans
- ▷ SF swaps between central banks
- ▷ Repo (Repurchase order, repurchase agreement)

◇ Circumvent exchange controls



Arrows show direction of loans (initial principals). Black = actual; green = original purpose.

◇ Cheat

- ▷ laundering of black money
- ▷ hide interest for tax or religious reasons
- ▷ “realize” a capgain instead of revaluing the asset
- ▷ hide ownership of assets
- ▷ do “carry trade” without using the words



Why use parallel/Bk2Bk loans at all?

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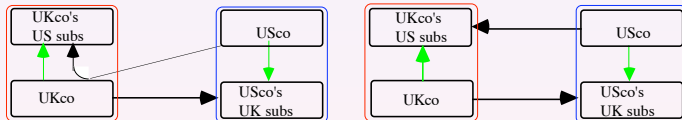
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- ▷ “realize” a capgain instead of revaluing the asset
- ▷ hide ownership of assets
- ▷ do “carry trade” without using the words



Why use parallel/Bk2Bk loans at all?

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Swapping for Tax Reasons

Swapping to avoid excess risk
spreads

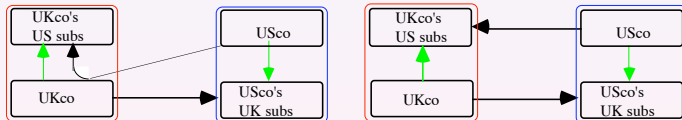
Swapping to Disguise Loans

Use #6: Choices &
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◇ Secured loans

- ▷ Gorby's gold-backed loans
- ▷ SF swaps between central banks
- ▷ Repo (Repurchase order, repurchase agreement)

◇ Circumvent exchange controls



Arrows show direction of loans (initial principals). Black = actual; green = original purpose.

◇ Cheat

- ▷ laundering of black money
- ▷ hide interest for tax or religious reasons
- ▷ “realize” a capgain instead of revaluing the asset
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- ▷ do “carry trade” without using the words



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Reducing Default Risk

Bid-Ask Spreads

Using Forwards (1): Arbitrage

Synthetic Rates are Worst Possible Combinations

Bounds linking Synth and Direct Rates

Using Forwards (2): Hedging

What is Exposure?

Hedging Contractual Exposure

Using Forwards (3): Speculation

Using Forwards (4): Minimizing bid-ask spreads

Using Forwards (5): Swapping loans or deposits

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Swapping to avoid excess risk spreads

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◇ Valuation of Outstanding Forward Deals

- ▷ Show Mkt Value as $N \times (F_{t,T} - F_{t_0,T})$ discounted
- ▷ Discounting often unthinkable to Genuine Accountants—but you can have your own secret version of the accounts
- ▷ M2M of forwards increases risk of *reported* profits if underlying hedgee is *not* M2M'ed \Rightarrow use M2M for other contracts too

◇ Valuation of FC-denominated contracts: Translate A/P, A/R at $F_{t,T}$, not at S_t (accountants' default option)

Valuation: Spot v Forward

	spot	forward
objective?	☺	☺
takes into account risk-adjusted expectations about future $\Delta\tilde{S}$?	☹	☺
can be locked in at no cost?	☹	☺
avoids delusions about gains or costs of hedging?	☹	☺



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- ◇ **Recommendation** Salesforce should use F not S to assess a deal's contribution to profit.
- ◇ **Does it matter?** " S v F merely affects how total profit is split up between operating and financial items"

Example from W. Loman's scrapbook:

- at t : sell for FC 1,000, with COGS of 20,000; no hedging
- At T : S_T turns out to be 27

		use $S=25$	use $F=24$
at t	Estimated Sales	25,000	24,000
	– costs	<20,000>	<20,000>
	= operating income	5,000	4,000
at T	Bank	27,000	27,000
	– Estimated Sales	<25,000>	<24,000>
	= capgain	2,000	3,000

- Either way, profit = 7,000 = Bank – costs



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- ◇ **Risk of using S :** if Willy L had not taken this course,
 - (unhedged:) he might have accepted the order even if $\text{COGS} = 24,500$
 - (hedged:) he might have believed that hedging costs him 1000

Example from W. Loman's scrapbook revisited:

- at t : sell for FC 1,000, with COGS of 24,500; hedged
- At T : receive 24,000

		use $S=25$	use $F=24$
at t	Estimated Sales	25,000	24,000
	– costs	<24,500>	<24,500>
	= operating income	500	<500>
at T	Bank	24,000	24,000
	– Estimated Sales	<25,000>	<24,000>
	= cost of hedging	<1,000>	0

- Either way, profit = Bank – COGS = –500
- but logically challenged humans believe it's because of hedging



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◇ Elements to be taken into account when deciding upon choice of loans:

- ▷ (if speculative): **risk-free rates** and expected rate of ap/de-preciation
- ▷ all **costs** paid on top of the risk-free rate:
 - PV'ed spreads
 - Upfront costs, if sizable.
- ▷ effect on **risk** (e.g. financial distress)

◇ Comments

- ▷ Risk contribution is hard to quantify in terms of cash money; so better **quantify PV(all costs)**, and then ponder whether risk considerations could reverse the answer
- ▷ Idea of looking at PV'ed spread is based on the option to swap the loan, so it implicitly takes the **forward rate as the planning equivalent** for the uncertain spot rate
- ▷ If the swap is not actually added (i.e. merely acts as valuation device), then better value **ex ante** does not guarantee better value **ex post**.



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Financial Alternatives (12 mo):

Offers:

- ▶ Bank A: EUR at 3% (LIBOR) + 1.0%; upfront EUR 1000+0.50%
- ▶ Bank B: EUR at 3% (LIBOR) + 0.5%; upfront EUR 2000+0.75%
- ▶ Bank C: USD at 4% (LIBOR) + 0.9%; upfront USD 1000+0.50%
- ▶ You need EUR 1m or, at $S_t = 1.333$, USD 1.333m

Choice:

	amount	PV risk spread	upfront	total
A	EUR 1m	$\frac{10,000}{1.03} = 9,708.7$	6,000.0	15,708.7
B	EUR 1m	$\frac{5,000}{1.03} = 4,854.4$	9,500.0	14,354.4
C	USD 1.333m	$\frac{9,000}{1.04} = 8,653.8$	5,750.2	14,404.2

Note: the last line implicitly computes costs on USD 1.333m and then translates into EUR i.e, divides by 1.333m. So for % costs, 1.333/1.333 cancels out, but for the fixed USD 1000 we need to divide by 1.333 (=750.2).



What have we learned in this chapter?

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- ◇ **Bounds**. With spreads, the synthetic rates are given by the rip-off versions of the perfect-markets formula. Normally the rates should be within the synthetic spread, and surely not so far out as to not even overlap with it.
- ◇ One application is to **hedge**. Hedging affects value, even ex ante, if it interacts with the other cashflows in the firm.
- ◇ Another application is **speculation**—on the spot, the forward, or the swap rate (basis).
- ◇ Forwards can also be used, when appropriate, to chip away at transaction costs (**shopping-around** applications).
- ◇ Shopping-around scenarios with often big differences arise when the firm faces asymmetric taxes or inconsistent risk spreads in two alternative currencies: then **swapping** can be useful.
- ◇ Swaps can also be used as a legally attractive way to make **mutual secured loans**, but there are also many shadier applications.



What else have we learned in this chapter?

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The Forward rate is a CEQ, so

- ◇ Do use forward rates for **accounting** valuation and updating
- ◇ Do use forward rates for **commercial** decisions
- ◇ Do use forward rates for **financing** choices