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Part VIII Management of swap exposure

11 Currency option swap

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The currency option swap was first introduced by Crédit Commercial de France (CCF) in September 1985.

The following case study has been simplified for pedagogic purpose. The implementation is of course, more intricate due to technical constraints of the bond markets.

Objectives

The objective of counterparty A was to achieve a sub-Libor US dollar funding through a successful bond issue for an amount larger and a cost lower than could be achieved through alternative deals available at the time, i.e. either:

- issuing exotic currency fixed-coupon bonds (e.g. New Zealand or Australian dollars) and entering into a classical currency swap with a third party, thereby only accessing a small amount for a short maturity with the additional risk of a reluctant market acceptance; or,
- issuing ECU fixed-coupon bonds and entering into a classical currency swap with counterparty B thereby only achieving a lacklustre sub-Libor cost.

The objective of counterparty B was to switch from an existing floating-rate US dollar funding into a European Currency Unit (ECU) fixed-rate funding at a more attractive foreign exchange rate and a cost lower than its two alternatives at the time, i.e. either:

- prepaying its US dollar debt and issuing new ECU fixed-coupon bonds, thereby incurring the fixed costs of refinancing (issue commissions, etc.); or,
- entering into a classical currency swap based on new ECU fixed-coupon bonds issued by a counterparty, thereby costing more than directly tapping the ECU market because of B's AAA-rating and a counterparty's goal of sub-Libor funding.

Mechanisms

The solution to the counterparties objectives was found by applying to the swap technique the experience acquired by CCF with the 'currency option bonds', lead-managed for Crédit Foncier de France (US dollar FRNs exchangeable for French franc fixed-coupon bonds) in October 1984 and for Electricité de France (US dollar FRNs exchangeable for ECU fixed-coupon bonds) in February 1985. The currency option swap involved the following steps:

1 Counterparty A issued US dollar FRNs with separate warrants permitting investors, during a one-year exercise period, to exchange the US dollar FRNs into ECU fixed-coupon bonds at predetermined foreign exchange rate and coupon.

2 Counterparty A simultaneously entered into a currency option swap with counterparty B, whereby B agreed to service A's ECU fixed-coupon bonds and A agreed to service B's existing floating-rate US dollar funding, if, and only to the extent that, the warrants were exercised by investors.

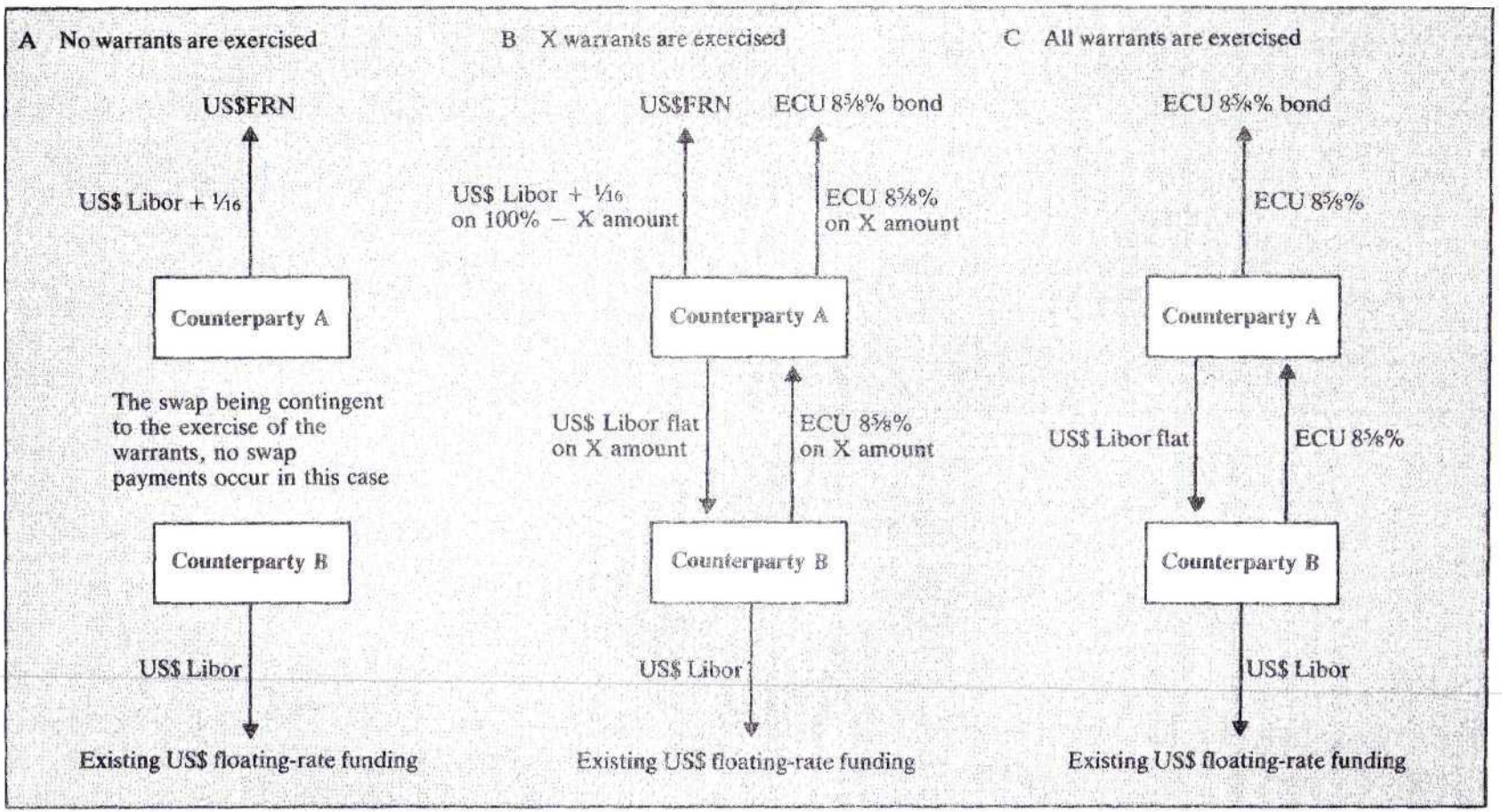
Because the warrants were giving investors a protection against a fall in both the US dollar currency (versus the European currencies included in the ECU basket) and ECU interest rates, investors were willing to pay a high premium to acquire such call options.

The value of those warrants, received upfront by A, was sufficient for A to share it with B and still achieve, through the swap, a very competitive sub-Libor cost with a successful bond issue and a creditworthy swap counterpart (AAA-rated). Since the swap becomes effective if, and to the extent that the warrants were exercised, counterparty A is never exposed to any ECU currency risk and ends up in all cases with a US dollar funding.

As far as B was concerned, receiving a substantial portion of the warrant premium was necessary to remunerate what was equivalent to selling call options on both the US dollar currency and the ECU interest rate. However, since B's objective was to switch from a US dollar liability into an ECU debt, the warrant exercise price was set close to market rates to become rapidly 'in the money', thereby increasing investors' incentive to exercise their options. As a matter of fact, for the contingent swap to become effective, one had to induce the exercise of those warrants.

Economic results

Counterparty A	
FRN issue amount	US$100 million
Maturity	6 years
Coupon	6-month Libor + $\frac{1}{16}$ per cent
Commissions	0.15 per cent flat
FRN cost	6-month Libor + 10 basis points (discounted at a theoretical 9 per cent Libor)
Warrant	Each warrant permitting investors to exchange their FRN at par, at any time during a 1-year exercise period, for ECU 6-year $8\frac{5}{8}$ per cent fixed-coupon bonds at a foreign exchange rate equivalent to the ECU/US spot rate prevailing upon issuance minus a 3 per cent discount
Warrant price	US$36 per warrant (equivalent to 3.6 per cent of the FRN face value)
Swap premium	Counterparty A to pay 40 per cent of the warrant price over to counterparty B (equivalent to 1.52 per cent of the FRN face value)
Swap US$coupon	6-month Libor flat paid by A to B
Swap ECU coupon	$8\frac{5}{8}$ paid by B to A
Swap maturity	Between 5 and 6 years, depending upon the underlying warrants exercise dates
All-in cost if warrants are not exercised	6-month Libor – 37 b.p.
All-in cost if all warrants are exercised	6-month Libor – 43 b.p. (because the FRN coupon of Libor + $\frac{1}{16}$ per cent is then replaced by the swap coupon at Libor flat).


A No warrants are exercised
US$FRN
US$ Libor + 1/16
Counterparty A
The swap being contingent to the exercise of the warrants, no swap payments occur in this case
Counterparty B
US$ Libor
Existing US$ floating-rate funding
B X warrants are exercised
US$FRN
ECU 8 5/8% bond
US$ Libor + 1/16 on 100% − X amount
ECU 8 5/8% on X amount
Counterparty A
US$ Libor flat on X amount
ECU 8 5/8% on X amount
Counterparty B
US$ Libor
Existing US$ floating-rate funding
C All warrants are exercised
ECU 8 5/8% bond
ECU 8 5/8%
Counterparty A
US$ Libor flat
ECU 8 5/8%
Counterparty B
US$ Libor
Existing US$ floating-rate funding

Counterparty B	
Swap premium	See above
Swap US$ coupon	See above
Swap ECU coupon	See above
Swap maturity	See above
All-in cost if warrants are not exercised	6-month Libor – 31 b.p. (the swap premium will decrease the cost of existing funding at Libor flat)
All-in cost if all warrants are exercised	7.67 per cent discounted ECU. fixed coupon against Libor flat (because of the swap premium and the 3 per cent discount on the foreign exchange rate US$/ECU

This 7.67 per cent ECU cost for counterparty B was comparable at the time with a cost of approximately 9.04 per cent for a new ECU issue (coupon of 8⅜ per cent issue commission of 1⅛ per cent flat) and 9.24 per cent on a classical currency swap (based upon a 20 b.p. margin under Libor that counterparty A wanted to achieve).

Cash-flows on the currency option swap are shown in Exhibit 11.1.

- If the warrants are not exercised, no cash-flow is involved in the swap.
- If some or all warrants are exercised, counterparty A former payments to the US dollar FRN holders are replaced by swap payments in US dollars to B and swap receipts in ECU from B to service the ECU bondholders.