

## Hedging Foreign Currency Debt with Cross Currency Interest Rate Swaps

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In recent years, the global nature of capital markets has made it possible for well-rated corporations and financial institutions to issue debt in foreign markets where they can obtain greater market liquidity and a lower cost of funds. Such a debt raising strategy poses challenges both from a risk management and an accounting perspective since not only is the debt in a currency different from the issuer's functional currency but it is also generally set at a fixed rate of interest.

The Accounting Standard IAS 21 requires that the debt be translated into the issuer's functional currency at the prevailing exchange rate. This means volatility in the currency markets can lead to significant translational gains and losses which are then recorded in the P&L Statement.

Cross Currency Interest Rate Swaps (CCIRS) are commonly applied to hedge foreign currency debt since they involve exchanging principal and interest payments in one currency for principal and interest payments in another currency. Those interest payments can be either based on a fixed rate or a floating rate and the payments received under the CCIRS are such that they offset exactly the payments made on the foreign debt. Hence, from an economic point of view the CCIRS effectively converts the foreign debt to a synthetic debt in the issuer's functional currency.

CCIRS are classified as derivatives under IAS 39 and as such must be valued and recorded on the balance sheet along with changes in the value also recorded on the P&L statement. The value of the CCIRS is not only affected by the exchange rate but is also dependent upon the interest rates in the two currencies. As such it can exhibit significant volatility which creates undesirable noise in P&L. However, under IAS 39, CCIRS do qualify for hedge accounting, i.e. the gains and losses arising from the change in the value of the CCIRS are allowed to be offset by the valuation gains and losses from the underlying debt.

The type of hedge relationship (cash flow or fair-value) depends upon the nature of the debt and the CCIRS. They can be briefly summarised as:

Table 1:

Foreign Debt	Cross Currency Interest Rate Swap	Resulting Synthetic Domestic Debt	Type of Hedge
a. Floating	Receive Foreign Floating – Pay Domestic Fixed	Fixed	Cash Flow
b. Floating	Receive Foreign Floating – Pay Domestic Floating	Floating	Cash Flow
c. Fixed	Receive Foreign Fixed – Pay Domestic Fixed	Fixed	Cash Flow
d. Fixed	Receive Foreign Fixed – Pay Domestic Floating	Floating	Fair Value

The receive-floating pay-floating currency swap is normally called a currency basis swap and deserves a special mention since it can comprise a core building block of the other three types of cross currency swaps when combined with one or more vanilla swaps. A currency basis swap can be thought of as an exchange of two floating rate bonds and as such should value to par. However, the market quotes a premium, called the cross currency basis spread, on one of the floating legs. As such, to achieve an accurate fair value, the basis spread has to be taken into consideration when valuing the CCIRS.

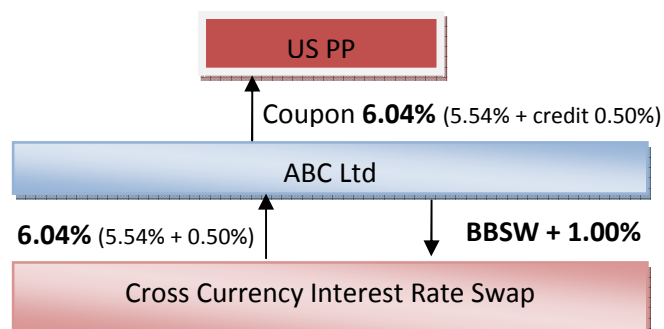
The inclusion of the basis spreads in valuations can create challenges for hedge accounting since the foreign currency debt is normally valued using the unadjusted market curve whilst the CCIRS needs to incorporate the basis spread in the valuation. This mismatch does not allow for any changes in the value of the debt to completely offset the changes in the value of the CCIRS. This can lead to potentially significant P&L volatility.

However, to reduce some of this P&L volatility, there is an alternative technique for hedge accounting in which the ineffectiveness arising from the basis spread can be captured in equity and thereby reduce the P&L volatility. To illustrate the underlying hedge accounting issue, we will describe the case where the foreign debt is raised through a US Private Placement and under the terms of the CCIRS we receive USD fixed and pay AUD floating plus a margin (i.e. case d. in Table 1).

## EXAMPLE

ABC Ltd issues a 3-year fixed rate bond of USD 100M. The coupon is 6.04% payable semi-annually and this includes a credit margin of 0.50%. On the same date, ABC enters into a 3-year CCIRS where ABC exchanges a face value of USD 100M @ 0.7423 for AUD 134M. Under the terms of the CCIRS, ABC receives fixed US 6.04% semi-annually and pays BBSW + 1.00% every quarter. There will also be a final exchange of principals on the maturity of the CCIRS.

### a. The Traditional Approach to Hedge Accounting



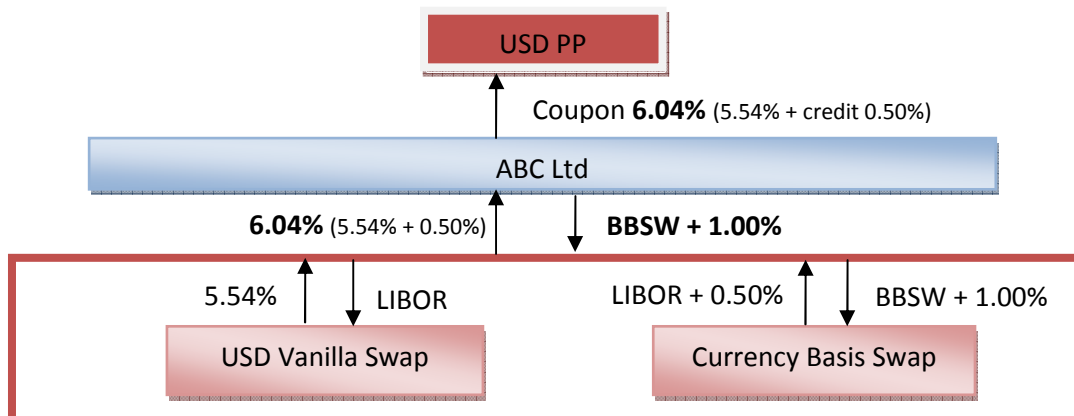
Under the traditional approach, ABC will designate the above CCIRS into **two** hedge relationships:

1. **Fair Value Hedge:** This CCIRS is designated to offset the changes in the fair value of the bond due to changes in the USD interest rates and the USD-AUD exchange rate. Fair value changes due to changes in credit margin are not hedged in this relationship and consequently the credit margins on both the CCIRS and the bond are excluded. In such a hedge relationship, there is a net P&L impact on each of the accounting dates since the change in the fair value of the bond is not completely offset by the change in the fair value of the CCIRS. This is due to the changes in the currency basis swap rates since the bond is valued without the basis swap rates while valuation of the CCIRS takes the basis swaps into consideration.
2. **Margin Cash Flow Hedge:** This hedge is designated to account for the credit margin on both the bond and the CCIRS. In this case, there is no P&L impact since the margin on both the actual CCIRS and the hypothetical CCIRS is valued with the basis spread included and the hedge is 100% effective. The effective portion is recorded in equity only to be reversed out at the maturity of the hedged item.

## b. The Alternative Approach for Hedge Accounting

Under the alternative approach, ABC will conceptually break the CCIRS up into two components:

- A vanilla USD swap whereby ABC receives fixed 5.54% and pays floating USD LIBOR.
- A cross currency basis swap where ABC receives floating USD LIBOR + 0.50% and pays floating AUD BBSW + 1.00%.



ABC will designate these two components into the following **three** hedge relationships:

- 1. Fair Value Hedge:** This hedge is designated to offset the changes in the fair value of the bond due to changes in the USD interest rates using the vanilla USD interest rate swap. In this hedge relationship, the changes in the fair value of the bond are exactly offset by the changes in the fair value of the USD vanilla swap because the basis spreads do not come into play and margin is excluded.
- 2. Basis Swap Cash Flow Hedge:** This hedge is designated to account for the changes in the fair value of the currency basis swap due to movements in the exchange rate. IAS 39 allows for changes in fair value due to movements in exchange rates to be classified either as a fair value hedge or a cash flow hedge. In this case we classify the hedge as a cash flow hedge since this allows us to use a hypothetical derivative to test for hedge effectiveness. Both the hypothetical derivative and the currency basis swap are valued using the currency basis spreads and as such offset each other exactly. The effective portion is recorded in equity with the changes due to the spot rate being recycled to P&L to offset the changes in the value of the bond under IAS 21.
- 3. Margin Cash Flow Hedge:** This hedge is designated to account for the credit margin on both the bond and the CCIRS. The treatment of this hedge is no different from the hedge accounting in the traditional methodology.

A second possible approach is to combine the currency basis swap cash flow hedge with the margin cash flow hedge in one hedge relationship. In this case the currency basis swap will be valued in its entirety including margin and the hypothetical derivative will still offset the movements exactly.

## Conclusion

When using CCIRS to hedge foreign debt, it is generally expected that the changes in the fair value of the debt will be offset by the changes in the fair value of the hedging instrument. This is not the case when currency basis spreads are used in the valuation process since the changes in the fair value of the debt are calculated using a flat curve while changes in the fair value of the currency swap are calculated by taking currency basis spreads into account. These currency spreads can cause significant ineffectiveness in a perfectly good hedge relationship, resulting in potentially significant P&L volatility.

To overcome this challenge we use a hypothetical derivative in a cash flow hedge to account for the currency basis swap. Under this relationship, we allow the changes in the fair value of the basis swap due to changes in the basis spread to be recognised in equity. The change in the fair value of the swap due to changes in the exchange rate is recorded in P&L where it offsets the change in the fair value of the debt. This significantly reduces the P&L volatility.

***Disclaimer:** This paper is for information purposes only. Any valuation methods and approaches to hedge accounting suggested in this paper should not be implemented without clarification from your auditors.*

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