FOOTING THE BILL

WHY HAVE COSTS OF OTC DERIVATIVES FOR COMPANIES INCREASED SO SIGNIFICANTLY? JAN VERMEER EXPLAINS

The financial crisis has taught us that banks can make any bet, no matter how risky, because if they lose in the end, they will get their money back. It is like going to the casino knowing that when you leave the building you will be refunded for any losses.

But it seems they are no longer prepared to bet on their customers. Indeed, banks want to earn more income from their customers, while putting less capital at their disposal. Banks have started to charge liquidity spreads, credit spreads, funding charges, trading charges and other costs to customers that conclude OTC hedging contracts.

They also increasingly force customers to exchange collateral for outstanding hedges, driving up funding costs and increasing the net required debt because the collateral needs to be financed. Regulation of OTC derivatives has been tightened to subject them to central clearing, and the extra costs incurred by banks are passed on to their customers. Then there is the infamous banking regulation, Basel III, which requires international banks to hold 9% of tier one (top quality) capital, creating extra funding costs that banks charge to their customers.

So what kinds of charges are we seeing?

To illustrate the effect of entering into a swap transaction, the difference in credit charges by the bank between entering into a €10m interest rate swap (IRS) with or without a credit support annex (CSA) for a BBB+ rated company is shown in the table below.

Bank arguments to charge liquidity spreads

Since the financial crisis started in 2008, banks have argued that IRSs provide an 'embedded loan' to the counterparty that receives the fixed rate and pays the floating rate. Given the upward sloping euro forward curve (see graph opposite), the fixed rate payable is initially higher than the floating rate payable (see matrix opposite). As a result, the fixed-rate payer initially pays a higher interest rate coupon than it receives, thereby providing the counterparty under the swap with an 'embedded loan'. This only equals out towards maturity, when the floating rate coupon becomes significantly higher than the fixed-rate coupon, and therefore the fixed interest rate should be decreased as a payment for the embedded loan.

Analysis

If we analyse the arguments above and apply this to the example opposite, you will see that the embedded loan has already been priced into the swap, as all cash flows have been present valued. In other words, a short-term negative outflow is reversed by a greater gross inflow at a date further out in the future, so that the net present values (NPVs) cancel out. In the matrix, you will see that the net cash flow is equal to 154,125.17 (so the net total floating coupons are higher than the net total fixed coupons), but the NPV is equal to zero.

This argument is being applied to organisations that have floating-rate investments (such as investment funds, pension funds and insurance companies), which they want to swap to fixed interest rates. But a lot of corporates with floating-rate debt use swaps to swap the floating-rate debt to fixed interest rates. If we follow the banks' logic, these corporates should receive the spread from their banks (as these organisations execute the reserve of the example shown above), but they are also effectively charged spreads under another name.

As a result, the bid-offer spread of OTC derivatives has increased significantly. Derivatives pricing is based on the funding costs of the bank. As banks are mysterious about their funding yield curve, they have essentially taken away the transparency of their pricing. This allows them to significantly increase their profit margin.

Until 2008, the OTC market was an efficient financial market. But since the financial crisis started, liquidity has fallen significantly. The interbank market has slumped to historical lows because of the lack of trust that exists among banks over their interbank counterparty risk. From a credit risk management perspective, corporates should proactively measure and

EXAMPLE CREDIT SUPPORT ANNEX (CSA) CHARGES

SHORT-TERM RATES	WITH CSA	WITHOUT CSA
5-YEAR IRS	0.20bps (= €1,000)	0.90bps (= €4,500)
7-YEAR IRS	0.30bps (= €2,100)	1.80bps (= €12,600)
10-YEAR IRS	0.40bps (= €4,000)	3.50bps (= €35,000)

NOTE: THESE COSTS ONLY REPRESENT THE CREDIT CHARGES FOR NOT HAVING A CSA IN PLACE

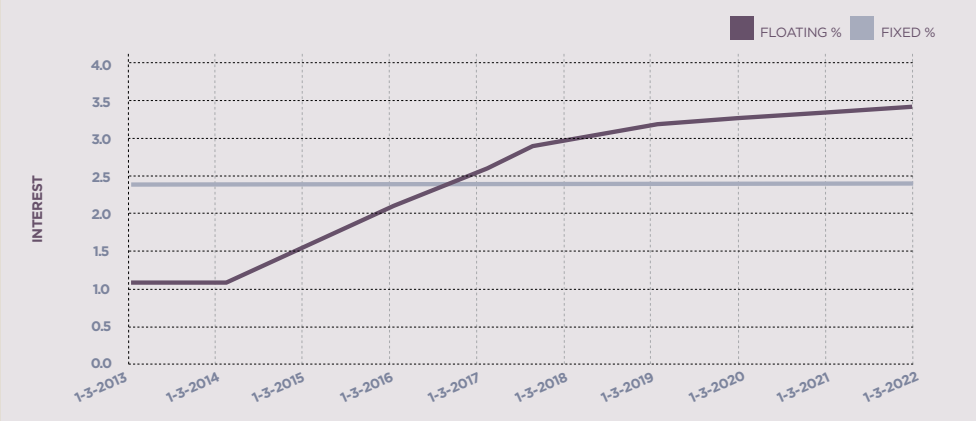
EXAMPLE SWAP PRICING

Let us consider an IRS where an investor wishes to swap a floating-rate investment into a fixed interest rate.

- All-in fixed euro rate paid by bank (received by the investor): 2.404% annually.
- Investor pays (bank receives): one-year Euro Interbank Offered Rate (Euribor) annually.

The fair value calculation of such a swap is a pretty straightforward process. The floating interest rates are calculated from the current yield curve (put simply, a one-year interest rate starting in one year's time can synthetically be created by borrowing the notional cash for two years, and simultaneously depositing the notional cash in one year's time. In reality, this calculation is performed via the discount function*, which is derived from the current yield curve).

The calculated (market) forward interest rates, which are currently tradable in the market, can then be used to calculate the forward floating coupons. Next, all coupons can be present valued via the discount function to calculate the NPV of all coupons (fixed and floating), which will give the fair value of the swap.



manage the credit risk of their financial counterparts. The cost of risk should be paid for simply because it is incorporated into a corporate's cost price. This therefore implies that corporates could be charging credit costs to their banks. At the moment, this might seem unthinkable, but it is another reason why independent alternatives to banks are important.

Since 2008, banks have lost tremendous amounts of money due to bad investment decisions, and the crisis is still not over. But it should not be taken for granted that customers will pay for banks' own bad management decisions by default. Independent alternatives to banks give you a choice. Some arguments given by banks as to 'why they should charge their customers' may sound logical, but they also smell like excuses to bring banking reserves back on track.

CASH FLOW DATE	FLOATING %	FLOATING COUPON	FIXED %	FIXED COUPON	NET CASH FLOW	PV FACTOR	NPV CASH FLOW
27-3-2013	1.1400	288,958.33	2.4040	-601,000.00	-312,041.67	0.988551767	-308,469.34
27-3-2014	1.1126	282,002.66	2.4040	-601,000.00	-318,997.34	0.977525179	-311,827.93
27-3-2015	1.5947	404,208.17	2.4040	-601,000.00	-196,791.83	0.961971707	-189,308.17
28-3-2016	2.0915	533,030.85	2.4040	-602,669.44	-69,638.59	0.941889461	-65,591.85
27-3-2017	2.4794	626,729.08	2.4040	-599,330.56	27,398.52	0.918854547	25,175.25
27-3-2018	2.8696	727,352.33	2.4040	-601,000.00	126,352.33	0.892877097	112,817.10
27-3-2019	3.0975	785,124.54	2.4040	-601,000.00	184,124.54	0.865690115	159,394.79
27-3-2020	3.2308	821,158.34	2.4040	-601,000.00	220,158.34	0.838159644	184,527.84
29-3-2021	3.2920	839,012.02	2.4040	-604,338.89	234,673.13	0.810943974	190,306.76
28-3-2022	3.3951	858,218.30	2.4040	-599,330.56	258,887.74	0.784029244	202,975.56
				€	154,125.17		0.00

*THE CALCULATED FORWARD INTEREST RATES NEED TO BE ADJUSTED BY THE BASIS SWAP SPREADS TO REFLECT THE CURRENT MARKET CONDITIONS

TWO INDEPENDENT ALTERNATIVES TO BANKS ARE:

1. **Implementing a centralised warehousing risk management infrastructure so that external transactions can be minimised.**
2. **Using exchange-traded futures instead of OTC transactions in case external transactions need to be concluded.**

Futures are interesting alternatives to OTC derivatives for these reasons:

- **Futures are much cheaper (in terms of the bid-offer spread) than OTC derivatives. In the past, the pricing difference was not considered to be that material, but this is no longer the case.**
- **A lot of futures can now be physically delivered at expiration. This was not the case in the past. So the argument that it is better to use OTC derivatives because there is no physical delivery with futures does not apply any more.**
- **An argument in favour of OTC derivatives was that they can be tailored to the customer needs (for example, notional amount and expiration date). Implementing portfolio management techniques will make this argument irrelevant. Also, the introduction of micro futures (with small face amounts) makes futures interesting for smaller organisations.**
- **In the case of OTC derivatives, you have a credit risk on a counterpart with a solvency ratio of maximum 10%. With exchange-traded futures, your counterpart is the exchange clearing with a solvency ratio of 100%. From a credit risk perspective, you would be smart to use exchange-traded futures instead of OTC derivatives.**

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