Centrus

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WHITE PAPER:

Demystifying derivative instrument valuations:
A commercial and accounting perspective

Recently several of our treasury clients have been querying the difference between the derivative valuations provided by banks, and the derivative valuations when looking at unwind values upon terminating a derivative prior to maturity. There have also been accounting valuation changes to further complicate matters.

In this white paper we address the differences between the "Mark-to-Market" of a derivative, a bank's valuation of that same derivative, and the latest in accounting valuations. In summary:

1. **The Mark-to-Market** of a derivative (we use as an example an uncollateralised interest rate swap), represents the Net Present Value of all future cashflows to be received and paid, discounted at LIBOR. This value is the same as that received in reporting statements from banks, and is often utilised for accounting purposes.

2. **The Bank Valuation of a derivative** is the Mark-to-Market adjusted for the bank's credit, funding and capital implications. It may also take into account the bank's strategy, commercial considerations and a bank's portfolio impact. This is an important factor to consider when terminating a derivative prior to maturity.

3. **The Accounting Valuation of a derivative**, is usually the same as the Mark-to-Market described previously (taking into account certain valuation adjustments that depend on the relevant accounting standard). There have been accounting developments which most entities should be aware of which puts a greater emphasis on credit adjustments to the Mark-to-Market for accounting purposes.

This is a complex and technical area which requires an understanding of cashflows, market movements, internal bank processes and considerations, and accounting developments. We address these topics in more detail in the following paper.

"MARK-TO-MARKET" OF A DERIVATIVE

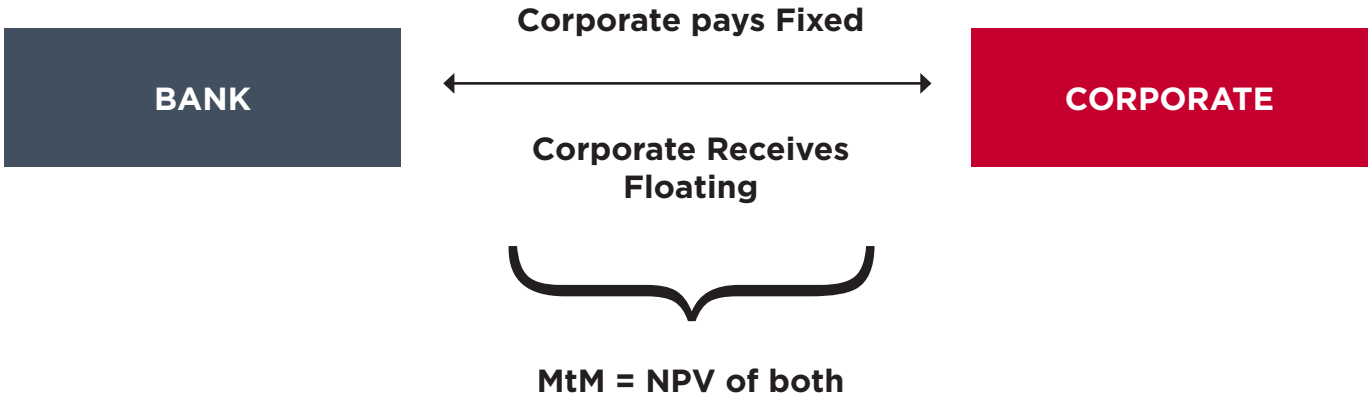
The Mark-to-Market (MtM) is an important concept for an organisation that enters into a derivative transaction. For a simple uncollateralised interest rate swap, it represents the net present value of the cashflows using current forward market interest rates. It is also referred to by banks as the "mid-MtM" value as it is calculated using mid-market data and does not include any other adjustments.

The discount rate used to value the future cashflows is typically LIBOR. However, there is debate amongst certain banks whether to utilise OIS or SONIA as the discount rate. This reflects ongoing technical, market, and commercial considerations.

The MtM is typically reported through monthly valuations reports which is sent by the bank's internal valuations team. This is usually separate from the bank's client facing derivatives team or trading team.

"MARK-TO-MARKET" = THE NET PRESENT VALUE OF FUTURE CASHFLOWS RECEIVED AND PAID, DISCOUNTED AT LIBOR.

Below is a simple example of a vanilla interest rate swap:



MtM is the base from which we explore two separate but related concepts in the following sections – a Bank's valuation and the accounting valuation for most corporate entities.

BANK VALUATION OF A DERIVATIVE

The value of a derivative from a bank's perspective in the event of an early termination (sometimes called an "unwind of the position"), may differ from the MtM of the derivative. The Bank will take into account and charge for the following adjustments when the derivative is initially entered into:

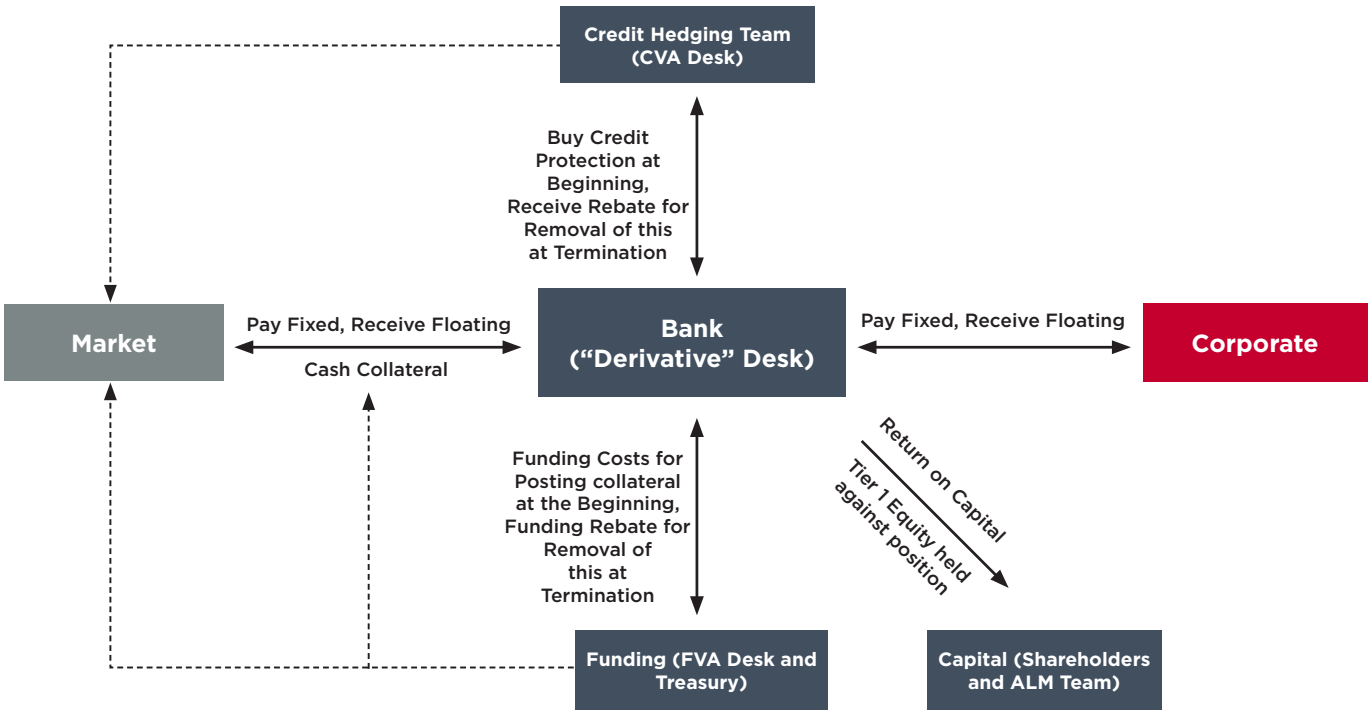
1. **Credit protection**, to protect against a possible default by the counter-party before maturity of the derivative. Some banks will also consider their own default risk, but this is an expansive topic beyond the scope of this paper.

2. **Future funding**, to provide the cash posted in the future for the "market hedge" - the market hedge is an equal and opposite derivative to the original one entered with the counterparty which mitigates the interest rate risk generated for the bank. In most instances, the majority of transactions with corporates will be on an uncollateralised basis while banks face clearing houses or interbank desks through daily collateral agreements.

3. **Bank capital**. This has two related areas: the first is that the interest rate swap is an asset for the bank, which needs to generate a return to the bank's shareholders. The second is that the asset needs an equivalent liability, specifically the amount of common equity held against the asset, as required by the bank's financial regulator.

BANK VALUATION = MARK-TO-MARKET ADJUSTED FOR THE BANK'S CREDIT, FUNDING AND CAPITAL IMPLICATIONS.

Below is the same vanilla interest rate swap, viewed from a bank's perspective:



Upon early termination of the swap before final maturity, the bank will consider all of the above at the point of termination. This typically means a release from the market to the bank, for credit risk, funding and capital at that point in time (these will have changed versus the start of the derivative, due to market movements).

Whether these releases are passed on to its counterparty depends on a number of factors, including:

1. **Bank's strategic direction:** Whether they want to exit or expand certain businesses.

2. **Commercial considerations:** Whether future business can be generated as part of the relationship with the client.

3. **Portfolio effects:** The bank is unlikely to look at the termination of single derivative in isolation. It will typically take into account the impact on the bank's entire portfolio of derivatives and loans with all clients, from a credit, funding and capital perspective described earlier.

If any entity elects to terminate a derivative prior to final maturity the amount it pays to the bank (or receives) will be a function of the MtM, the adjustments described previously, as well as other factors outlined above.

Given the above, each bank will provide different treatment depending on the way it manages credit risk, its cost of funding/capital, regulatory regime, portfolio impact, commercial and strategic direction.

ACCOUNTING VALUATION OF A DERIVATIVE

The value of a derivative from an accounting perspective is typically the same as the MtM described above. This is the "Fair Value" currently utilised for accounting purposes for most corporates.

However, there have been developments under IFRS 13 "Fair Value Measurement" (which was effective from 1 January 2013) addressing "non-performance risk", the likelihood of an obligation not being fulfilled. This places greater emphasis on credit adjustments to the MtM for accounting purposes.

These adjustments mirror some of the concepts described in Section 3, Fair Value from a bank's perspective, and primarily are:

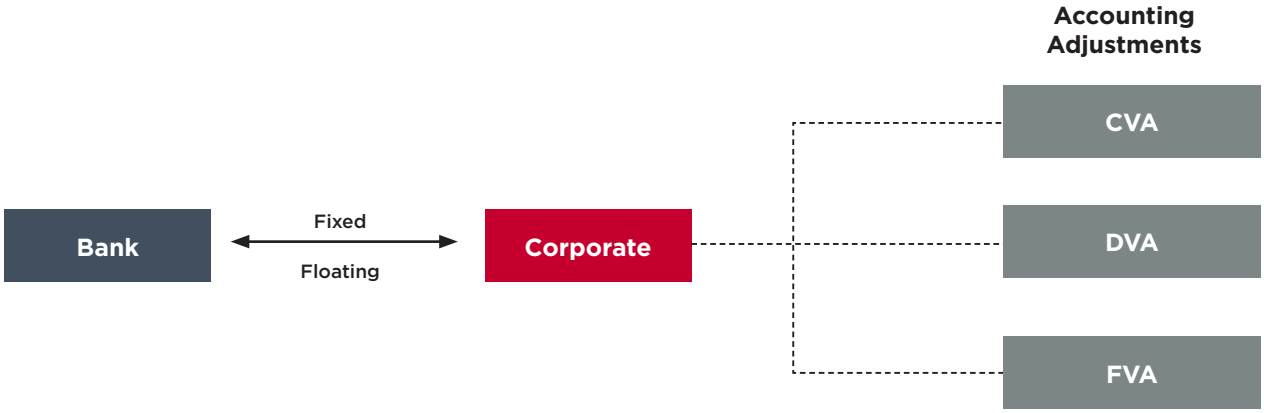
1. **Credit Valuation Adjustment (CVA)**: the impact of the bank credit risk to its counterparty.

2. **Debit Valuation Adjustment (DVA)**: the impact of its counterparty credit risk to the bank.

3. **Funding Valuation Adjustment (FVA)**: derivative obligations will normally have a funding impact to the firm entering these which would be estimated via their own credit spreads.

ACCOUNTING VALUATION = MARK-TO-MARKET, POTENTIALLY ADJUSTED FOR THE CVA, DVA AND FVA.

Below is the same vanilla interest rate swap, viewed from an accounting perspective:



ABOUT CENTRUS

As one of the most active derivatives advisors in the UK and Ireland, Centrus possesses the knowledge, experience and technological capability to understand the Mark-to-Market of a derivative portfolio, analyse the different charges that banks may apply to positions, and keep up to date on relevant accounting valuation developments. Please get in touch using the following contact details if we can be of assistance:

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