

Corporate Treasury needs a solid basis

A company-wide risk position in which all risk categories are mapped with respect to their terms is the prerequisite for solid bank treasury consulting. This article shows how to compute and evaluate this risk position and how to quantify the inherent risks.

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For a professional risk management the corporate treasurers may currently use the full range of modern derivative instruments, and can precisely manage their FX and interest risks without being handicapped by a given liquidity need.

By selling treasury instruments to their customers the banks have the possibility to access additional, continuous profit potentials. These derivative instruments are often a lot more profitable than the traditional credit business in terms of risk/return ratio. How can the banks benefit from this trend? Besides the usual preconditions like excellent product know-how and attractive prices, we would identify the definition of clear benchmarks as one of the key factors for successful treasury operations.

As treasury activities are most developed in banks, we would like to outline the state of the art of a well-structured bank treasury (ALM) before going on to describe, in analogy, the prerequisites for corporate treasury.

The basis of a smooth bank treasury operation is the taking over of all total bank interest and FX positions at the market rates valid on the conclusion date. In this way market risks are bundled and transferred to the ALM. The ALM may now decide to hedge the risks (since the reference rate

is the actual market rate, the result of the ALM is zero) or stay in the risk position (in this case the ALM will profit if the final price is better than the fixed reference rate). As a consequence, the ALM has a clearly defined responsibility.

Putting this principle into banking practice may entail a lot of problems, as the benchmark is not that clear for numerous positions – e.g. customer products with no defined interest adjustment, equity, other assets & liabilities, etc. In order to be able to manage and measure the risks, these positions have to be mapped by assuming the terms and interest adjustments. For this mapping process a mixture of different terms (e.g. 50% overnight, 50% 6-month rate) or roll-over rates may be selected as the benchmark for the ALM. Before starting to manage the overall position it is absolutely essential to discuss the benchmark for every single position, work out the pros and cons and finally fix and document the chosen benchmark.

Implementation within the company

The first important step is to ensure company-wide understanding of the starting position – the critical point being to fix an appropriate benchmark. This benchmark (FX rate, interest rate) is the given price used by the corporate treasurer to fix the result. To illustrate

this point we would like to start with a comprehensive example. The same procedure and consequences also apply to more complex positions (other assets & liabilities, foreign currency participations, foreign currency offers, etc.).

Example:

In practice internal calculation prices, budget prices or actual spot rates are generally used to measure the treasury result. The resulting problems can be illustrated using the following concrete example:

A German customer with USD imports

- Price: USD 1,000,000
- Term: in 12 months
- Calculation rate: 1.0500
- EUR/USD spot: 1.1500
- EUR/USD 12-mth: 1.1350

Approach 1:

Benchmark = calculation price (1.05):

the treasurer can lock in a risk less profit by closing the position with the actual outright rate of 1.1350.

Instead of the calculated EUR 952,381 (1,000,000/1.05) he has to pay only EUR 881,057 (1,000,000/1.1350).

Approach 2:

Benchmark = spot rate (1.15):

as the actual outright rate is below the benchmark, the treasurer can only equal or outperform the benchmark by taking risks.

The use of calculation prices or spot rates results in windfall profits or “dream” rates that can only be achieved by taking additional risks.

The success of the treasury activity is in both cases dominated by the choice of the benchmark rather than by the actions of the treasurer.

Approach 3:

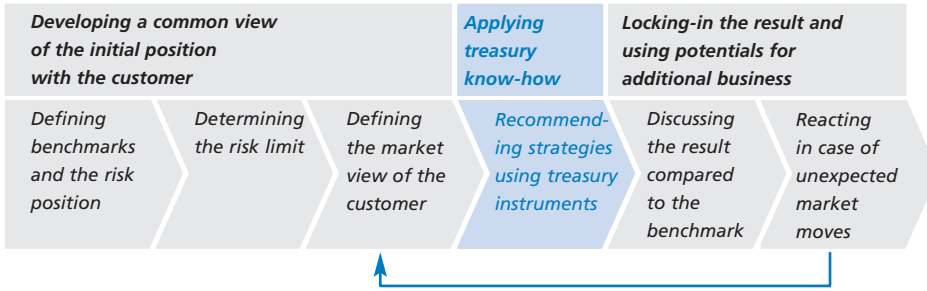
In order to establish an objective benchmark we propose to use the rate at which the position can actually be closed.

The rate for the “no-risk position” is the actual outright rate (in our example 1.1350).

Using this method the treasurer may decide whether to hedge the risk (treasury result = 0) or to stay in the risk (benchmark to evaluate the treasury result is thus the corresponding outright rate).

On the basis of that simple example it should be clear that the ideal benchmark must be the corresponding outright rate if the treasury is responsible for managing market risks. However, putting this principle into practice can also entail a number of problems for the corporate treasury, the main reason being that for most positions the identification of the benchmark and the corresponding mapping is not as clearly defined as in our cited example.

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This may be the case for:

- Foreign currency participations
- Budgeted sales and expenses
- Land and buildings
- Equity
- Investment projects
- Offers

In order to be able to measure the risk and define the responsibility of the treasury, benchmarks have to be defined for all these positions.

Risk Measurement

As the benchmark is the “no-risk position”, the treasurer can either close the position without any profit or try to outperform the benchmark by taking risks. These risks have to be limited if they are to stay manageable for the company as a whole.

An essential prerequisite for effective risk measurement is

the use of objective criteria. These may be fulfilled by using statistical methods like VaR (Value at Risk) approaches. One common factor in all VaR (or Cash Flow at Risk) approaches is the MTM valuation, showing the possible costs of closing the position with possible market changes and thus returning to the no-risk position.

By using historical volatilities and correlations as objective risk parameters it becomes possible to compare single positions and evaluate the company’s total risk position. As banks, and treasury departments in particular, have a great deal of experience in this area as well as the required data at their disposal, they are able to offer valuable support to their customers.

Compared with the common bank standard of measuring the risk using an assumed

holding period of one day, the holding period for corporate treasury exposures has to be redefined. The main factor influencing the choice of holding period is the time lag required to react to market changes.

Risk measurement can also be illustrated by the simple example we used above.

- Volatility EUR/USD: 10%
- Meaning that the rate is not lower than probability
- 1.0350 84%
- 0.9602 95%
- 0.8820 99%

Interpretation:

The probability that the EUR/ USD rate is not below 0.8820 is 99%, or, if the position is not covered, the probability that the possible loss on that position is not higher than EUR 252,730 compared to the benchmark = outright (1,000,000/ 1.1350)- (1,000,000/ 0.8820) is 99%.

- Loss limit: EUR 100,000
- Required confidence level: 99 %

As the effective risk (~253,000) exceeds the loss limit (100,000) by a factor of 2.53, the maximum open position is USD 395,000 (1,000,000/2.53).

Conclusion:

The steps described above are an essential prerequisite for traditional bank consulting, their aim being to define the “optimum” strategy for the given market view and internal risk limits. The advantage of this approach is that the bank’s arguments and proposed strategies can be evaluated using an objective criterion. In our view, implementation of the described steps is a sine qua non for the establishment of an active corporate treasury operation.

