# Evaluation of Interest Rate Derivatives with LIBOR Models

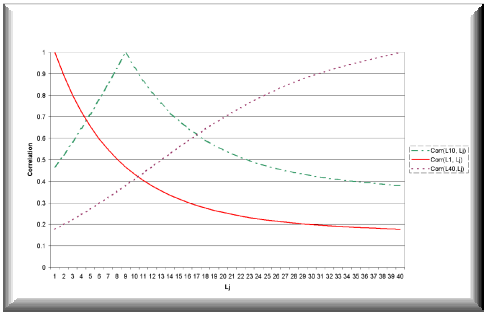
## Our Service

On the basis of most recent mathematical finance research, we have developed methods and software solutions for you that enable an evaluation of complex interest rate derivatives in line with the profile of the real market. The starting point for this evaluation are liquid standard interest rate options (caps and swaptions), from which a LIBOR interest rate model is calibrated in real time. Additionally, we offer innovative methods to evaluate complex structured interest rate products as, for example, Bermudan-style instruments, contracts with callable exercise features.

$$dL_i = \sum_{j=m(t)}^{i} \frac{\delta_j L_i L_j \gamma_i \cdot \gamma_j}{1+\delta_j L_j}\, dt + L_i \gamma_i \cdot dW^{(*)}$$

## Fields of Application

Our software solutions are developed to be used in financial institutions, such as in banks, insurance companies or pension funds, that need, in a growing measure, innovative and precise mathematical models and methods to analyze the interest rate markets, interest rate derivates and their respective hedging strategies.




## We Offer

- High efficiency of the applied methods
- Real-time monitoring of the defining parameters for the LIBOR interest rate model and of the price development of derivative instruments
- Stability of the applied calibration algorithms
- Optional use of exogenously defined or implicitly determined interest rate correlation structures
- Flexibility in the choice and the specification of the number of random factors for the model calibration
- High speed Monte Carlo valuation of exotic derivatives, especially of Bermudan-style interest rate products, by using new iterative procedures and highly precise martingale estimators

## Key Benefits

Our innovative methods and software solutions enable a better evaluation of your interest rate derivatives in line with real market conditions. With our tools, you can watch in real time the changes in the parameters that are relevant to the market and analyze how these changes affect the prices of your interest rate derivatives. Our software is particularly well suited to evaluate complex (exotic, OTC) interest rate derivatives regarding the prices of liquid interest rate options.

$$\rho_{ij} = \exp\left[-\tfrac{|j-i|}{m-1}\left(-\ln\rho_\infty + \right.\right.$$
$$+\eta_1 \tfrac{i^2+j^2+ij-3mi-3mj+3i+3j+2m^2-m-4}{(m-2)(m-3)} +$$
$$\left.\left. -\eta_2 \tfrac{i^2+j^2+ij-mi-mj-3i-3j+3m+2}{(m-2)(m-3)}\right)\right],$$
$$\eta_1 > 0,\ 3\eta_1 > \eta_2 > 0,\ 0 < \eta_1+\eta_2 < -\ln\rho_\infty.$$

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