

# Calibration of Interest Rate Models - Transition Market Case \*

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## Abstract

A methodology to calibrate multifactor interest rate model for transition countries is proposed. The usual methodology of calibration with implied volatility cannot be used as there are no markets for regularly traded derivatives. The existence of such a markets is essential for this calibration. The paradigm used is the Brace-Gatarek-Musiela model of interest rates (Brace, Gatarek and Musiela (1997)), which models the evolution of LIBOR (London InterBank Offered Rate) market interest rates, together with the Orthogonal GARCH model proposed by Alexander (2002), and further generalized by van der Weide (2002). The estimated model is used for the analysis of interest rate markets with shorter-end maturities in the 4 Visegrad countries (Slovak Republic, Czech Republic, Poland and Hungary).

V tomto článku je navrhnutá metodológia vhodná na kalibráciu viacfaktorových modelov úrokovej miery pre tranzitívne krajiny. Metodológia kalibrácie použitím implikovanej volatility, ktorá sa bečne používa, v tomto prípade je nevhodná, keďže v týchto krajinách nie je rozvinutý trh s derivátmi. Existencia takéhoto trhu je nevyhnutná pre takúto kalibráciu. Použitý model úrokových mier je model Brace-Gatarek-Musiela (Brace et al. (1997)), ktorý popisuje vývoj LIBOR úrokových mier, spolu s Ortogonálnym GARCH modelom, navrhnutým v Alexander (2002) a zovšeobecneným v van der Weide (2002). Táto metodológia je použitá na analýzu trhov s úrokovou mierou v krajinách Visegrádskej štvorky.

*Keywords:* interest rate, interest rate models, calibration, transition countries

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