

## Markov Functional Interest Rate Models Springer

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The class of Markov functional models (MFMs) attempts to overcome this in-convenience by combining the strong points of market and short rate models, namely the exact replication of prices of calibration instruments and tractability. This is achieved by modelling the numeraire and terminal discount bond

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*Markov Functional interest rate models with stochastic ...*

An additional advantage of Markov-functional models is the fact that the specification of the model can be such that the forward rate distribution implied by market option prices can be fitted exactly, which makes these models particularly suited for derivatives pricing.

*Markov-Functional Interest Rate Models by Phil J. Hunt ...*

Abstract. We introduce a general class of interest rate models in which the value of pure discount bonds can be expressed as a functional of some (low-dimensional) Markov process. At the abstract level this class includes all current models of practical importance.

*Markov-functional interest rate models | SpringerLink*

3. Markov-Functional Interest Rate Models The class of models with which we shall work we refer to as Markov-functional Interest Rate Models (M-F models). The assumptions we make here are motivated by two key issues: rst, the need for a model to be well-calibrated to market prices of relevant stan-

*Markov-Functional Interest Rate Models - WordPress.com*

An important class of interest rate models, which includes many of the models currently used in practice, is the class of Markov-functional models 1 234. The advantage of these models is that the...

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In the notation of our Markov-functional LIBOR model in Section 3, we can rewrite line as follows: Since  $N_t = P(t, T_m)$ , we have  $(T_i, T_m) = 1$ . Moreover, for  $k = i + 1, \dots, m - 1$ , Hence, we obtain the desired Markov-functional forms in as follows: where the function  $f_i$  is obviously given by

*One-factor Markov-functional interest rate models and ...*

I Develop an n-dimensional Markov-functional interest rate model (MFM). I Investigate similarities and differences between the MFM and the LMM→can we transfer the intuition from the LMM SDE to the MFM? I Investigate potential usefulness in practise: Price Targeted Accrual Redemption Notes (TARNs).

*An n-Dimensional Markov-Functional Interest Rate Model*

For xed tyou can calibrate the model to one market quoted interest rate optoin (typically a caplet or swaption). You can choose the strike of the option, but the rest of the smile is implied by the model.

Peter Caspers (IKB) Markov Functional Model November 13, 2013 30 / 72

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## *Markov Functional Model - QuantLib*

The LIBOR Markov-functional model is an efficient arbitrage-free pricing model suitable for callable interest rate derivatives. We demonstrate that the one-dimensional LIBOR Markov-functional model and the separable onefactor LIBOR market model are very similar. Consequently, the intuition

## *A comparison of Markov-functional and market models : the ...*

A stochastic volatility Markov-functional model has the virtue of both being able to fit current market prices across strikes and to provide better control over the future evolution of rates and volatilities, something which is important both for pricing of certain products and for risk management.

## *Multidimensional Markov-Functional and ...*

This paper develops an n-dimensional Markov-functional interest rate model, i.e. a model driven by an n-dimensional state process and constructed using Markov-functional techniques. It is shown that this model is very similar to an n-factor LIBOR market model hence allowing intuition from the LIBOR market model to be transferred to the Markov-functional model.

## *An N-Dimensional Markov-Functional Interest Rate Model by ...*

Downloadable (with restrictions)! We introduce a general class of interest rate models in which the value of pure discount bonds can be expressed as a functional of some (low-dimensional) Markov process. At the abstract level this class includes all current models of practical importance. By specifying these models in Markov-functional form, we obtain a specification which is efficient to ...

## *Markov-functional interest rate models - IDEAS/RePEc*

The model is suitable for pricing certain types of exotic interest rate derivative products, such as targeted accrual redemption notes, on LIBORs or constant maturity swap spreads. For these products, the n-dimensional Markov-functional model may be used as a benchmark model, allowing for powerful and flexible control of both correlations between different rates and skews/smiles in implied volatilities.

## *An n-dimensional Markov-functional interest rate model ...*

To achieve this we consider the general class of Markov-Functional interest rate models (MF models), first introduced by Hunt, Kennedy and Pelsser (2000). The defining characteristic of MF models is that pure discount bond prices are assumed at any time to be a function of some low-dimensional process which is Markovian in some martingale measure.

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## *Markov-Functional Models | SpringerLink*

In probability theory, a Markov model is a stochastic model used to model randomly changing systems. It is assumed that future states depend only on the current state, not on the events that occurred before it. Generally, this assumption enables reasoning and computation with the model that would otherwise be intractable. For this reason, in the fields of predictive modelling and probabilistic forecasting, it is desirable for a given model to exhibit the Markov property.

## *Markov model - Wikipedia*

The Markov functional modeling approach consists of a Markovian driver process  $x$  and a mapping functional representing the asset states  $S(t)$  as a function of  $x(t)$ . It was originally developed in the context of interest rate models, see [7]. Our approach however is similar to

## *Markov Functional Modeling of Equity, Commodity and other ...*

Therefore, in Chapter 2, we introduce the Markov-Functional Interest Rate Model, which will be the main focus of this thesis. The defining characteristic of Markov-Functional model is that prices of discount bonds are functions of some low-dimensional Markov process. This allows for the efficient implementation of the model.

## *MARKOV-FUNCTIONAL MODEL ON A LATTICE PEE MENG HUAT*

The Markov functional modeling approach consists of a Markovian driver process  $x$  and a mapping functional representing the asset states  $S(t)$  as a function of  $x(t)$ . It was originally developed in the context of interest rate models, see [ Hunt Kennedy Pelsser 2000 ].

## *Markov Functional Equity Model - Christian Fries*

Kennedy, J and Pham, D (2013) Implications for Hedging of the choice of driving process for one-factor Markov-functional models, Int. J. Theor. Appl. Finan. Volume 16, No. 05.[ Kaisajuntti, L and Kennedy, J (2013) An n-dimensional Markov-functional Interest Rate Model, Journal of Computational Finance, Volume 17, Issue 1.

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