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A Relative Research of the Vasicek and the CIR Model

By

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Supervisor: Professor Kostas Giannopoulos

Statement of Authorship

I thereby anoint that I have authored this master thesis independently and without use of others than the indicated resources. All texts, which are exactly or in generally article taken out of publications or other resources, are marked as such.

Nektaria Christoforou

Limassol, 1/2/2018

Dedicated to my children Andriana and Nikolas.

Thanks to

This thesis held in Neapolis University Paphos and specifically in The School of Business specializing in the Master Program of Banking, Investment and Finance.

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Executive summary

Recent years have seen the development of theoretical models of the structure of interest rate models. The modeling and forecasting of interest rates is an especially prime and challenging. It is one of the most prime indicators for pricing potential claims, identifying capital costs and managing financial risk. As an effect, extensive research has been developed in this area.

The purpose of this thesis of the term structure of interest rates is to analyze and present the relationships between them. The last fifty years, financial economists have turned their interest especially in this field of research which is particularly important for the conduct of monetary policy.

In the first chapter of the survey we are investigating the structure of interest rates theoretically. In particular, general introductory elements of the interest rate structure are presented, basic definitions are provided, and the maturity theories accompanying these correlations are presented. At the same time, a detailed bibliographic review is made on the structure of interest rates and on their evolution and a brief review of the models to be followed.

In the second chapter I start with a brief description of the interest rate models. Then I compare the models to each other, quote how their differential equations come out, I present the single factor interest rate models in detail for these models.

In the third chapter of the research using the models of Vasicek and Cox- Ingersoll - Ross examined the empirical application whether specific rates covariate with the passage of time in the secondary market of US money. Also compare the two methods together.