



Master thesis in Mathematics-Economics

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Swaptions pricing

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Abstract

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1 Introduction

In this thesis we will investigate swaptions pricing.

2 Swaptions as a missing link in asset allocation

Look at pdf form Noamura

3 Mathematics of pricing swaptions

Look at Swaption pricing and isolating volatility exposure.

To understand why swaption contracts are priced a certain way, it's important to grasp the basics of what affects their value. This chapter simplifies these concepts by explaining interest rates, bonds, swaps, and options, and then shows how they come together to determine the price of a swaption.

3.1 Time value of money

3.2 The yield curve

3.3 Forward rates

3.4 Bonds

3.5 Financial derivatives

3.6 Interest rate swaps

3.7 Options

3.8 Swaptions

4 SABR Implied Volatility and Option Prices

Look at The SABR model

4.1 Process for the forward rate

4.2 The SABR model

4.3 Estimating Parameters

5 Data and the Volatility Risk Premium

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5.1 Data

5.2 The volatility Risk Premium

References

- [1] Armstrong, M.A. Basic Topology. England: Editorial Board, 2000.