UNIVERSITY OF LAUSANNE

TITEL

by

NAME

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HEC - School of Business

January 1, 2020

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I, NAME, declare that this thesis titled, 'TITLE' and the work presented in it are my own. I confirm that:

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UNIVERSITY OF LAUSANNE

Abstract

HEC - School of Business

Master of Science in Finance

by NAME

Thesis abstract written here. Max $\frac{1}{2}$ of a page, both in Englisch & French....

Acknowledgements

The acknowledgements and the people to thank go here, don't forget to include your project advisor.

Executive Summary

The executive summary should go here. Write about 2 pages...

Chapter 1

Introduction

1.1 Introduction

TEXT

What follows is a reference: Merton (1973)

Bibliography

Merton, R. C. (1973). Theory of rational option pricing. *The Bell Journal of economics and management science*, pages 141–183.

Tables

	PML2			
	$T = 25$		$T = 100$	
True parameters	$a = 1$	$b = 1$	$a = 1$	$b = 1$
Mean	0.996	0.915	0.994	0.956
STD	0.567	0.249	0.401	0.177
min	0.001	0.001	0.001	0.331
max	4.464	2.206	2.848	1.619
RMSE	0.567	0.263	0.401	0.182
	QGPML2			
	$T = 25$		$T = 100$	
True parameters	$a = 1$	$b = 1$	$a = 1$	$b = 1$
Mean	0.997	0.917	0.998	0.957
STD	0.552	0.247	0.393	0.176
min	0.001	0.001	0.001	0.330
max	3.880	2.200	2.543	1.641
ΔRMSE (%)	2.606	0.937	2.193	0.728

Table 4: This Table reports the results of the QGPML2 simulation described in model (1). The true parameters are $a = 1$, and $b = 1$. The RMSE is defined as $\left(\frac{1}{M}\sum_{j=1}^{M}(\hat{\theta}^{(j)} - \theta)^2\right)^{1/2}$, where $\theta = a$ or b. Here, the superscript $j = 1, \cdots, M$ denotes a simulation. We took $M = 30'000$. By ΔRMSE (%) we denote the percentage gain in the MSE if one uses QGPML2 instead of PML2.

Figures

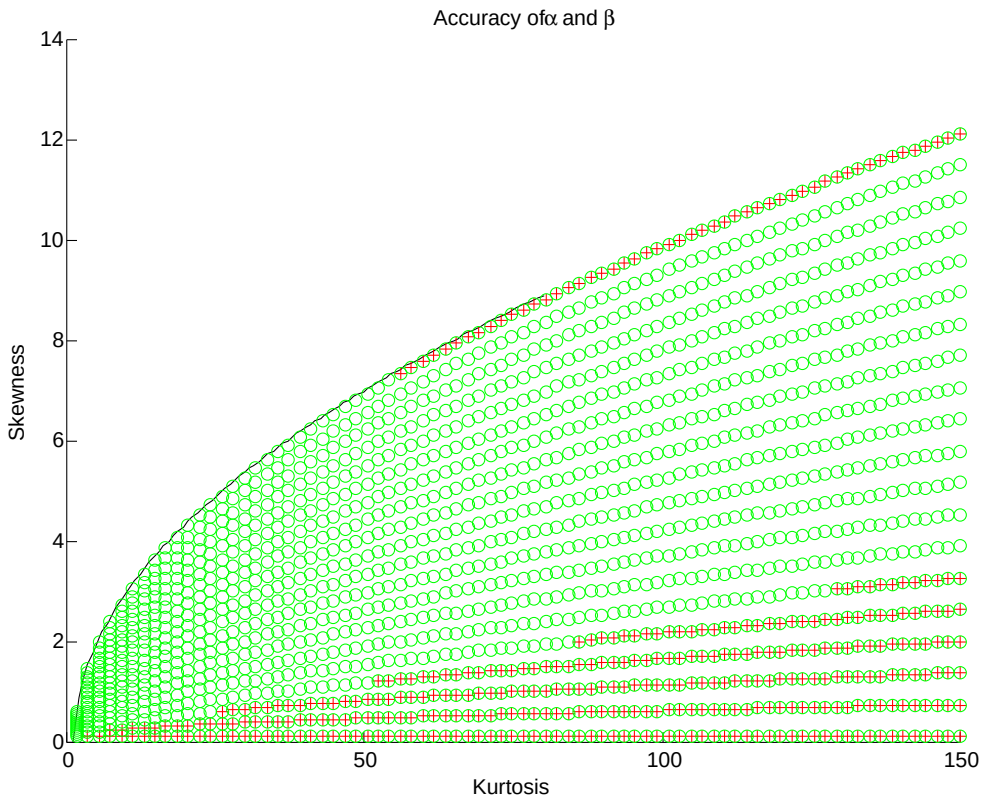

Figure 1.1: This figure represents the skewness-kurtosis domain for which a density exists (the domain is symmetric with respect to the horizontal axis). The circles represent those points for which we computed the parameters α and β. The symbol + represents those points for which the distance between the original skewness and kurtosis and the recomputed skewness and kurtosis (after evaluation of the α and β) is larger than 10^{-5}.