

## Accepted Manuscript

Estimation risk for the VaR of portfolios driven by semi-parametric multivariate models

Christian Francq, Jean-Michel Zakoïan

PII: S0304-4076(18)30057-5

DOI: <https://doi.org/10.1016/j.jeconom.2018.03.018>

Reference: ECONOM 4497

To appear in: *Journal of Econometrics*

Received date: 9 September 2016

Revised date: 1 January 2018

Accepted date: 30 March 2018

Please cite this article as: Francq C., Zakoïan J., Estimation risk for the VaR of portfolios driven by semi-parametric multivariate models. *Journal of Econometrics* (2018), <https://doi.org/10.1016/j.jeconom.2018.03.018>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



# Estimation risk for the VaR of portfolios driven by semi-parametric multivariate models

CHRISTIAN FRANCO<sup>\*</sup> AND JEAN-MICHEL ZAKOÏAN<sup>†</sup>

March 30, 2018

## Abstract

Joint estimation of market and estimation risks in portfolios is investigated, when the individual returns follow a semi-parametric multivariate dynamic model and the asset composition is time-varying. Under ellipticity of the conditional distribution, asymptotic theory for the estimation of the conditional Value-at-Risk (VaR) is developed. An alternative method - the Filtered Historical Simulation - which does not rely on ellipticity, is also studied. Asymptotic confidence intervals for the conditional VaR, which allow for simultaneous quantification of the market and estimation risks, are derived. The particular case of minimum variance portfolios is analyzed in more detail. Potential usefulness, feasibility and drawbacks of the two approaches are illustrated via Monte-Carlo experiments and an empirical study based on stock returns.

*JEL Classification:* C13, C31 and C58.

*Keywords:* Confidence Intervals for VaR, Dynamic Portfolio, Elliptical Distribution, Filtered Historical Simulation, Minimum Variance Portfolio, Model Risk, Multivariate GARCH.

<sup>\*</sup>CREST and University of Lille, BP 60149, 59653 Villeneuve d'Ascq cedex, France. E-Mail: christian.franco@univ-lille3.fr

<sup>†</sup>Corresponding author: Jean-Michel Zakoïan, University of Lille and CREST, 5 avenue Henry Le Chatelier, 91120 Palaiseau, France. E-mail: zakoian@ensae.fr, Phone number: 33.1.70.26.68.46.

Download English Version:

<https://daneshyari.com/en/article/7357840>

Download Persian Version:

<https://daneshyari.com/article/7357840>

[Daneshyari.com](https://daneshyari.com)