

The European Journal of Finance >

Volume 25, 2019 - [Issue 17: Workshop on Recent Developments in Econometrics and Financial Data Science ICMA Centre, Henley Business School, University of Reading, UK, 2nd November 2017](#)

363 Views | 12 CrossRef citations to date | 0 Altmetric

Articles

# Expected shortfall assessment in commodity (L)ETF portfolios with semi-nonparametric specifications

Esther B. Del Brio, Andrés Mora-Valencia & Javier Perote  

Pages 1746-1764 | Received 10 Jan 2018, Accepted 05 Dec 2018, Published online: 17 Dec 2018

 Cite this article  <https://doi.org/10.1080/1351847X.2018.1559213>



Sample our  
Economics, Finance,  
Business & Industry Journals  
>> [Sign in here](#) to start your access  
to the latest two volumes for 14 days

 Full Article  Figures & data  References  Citations  Metrics

 Reprints & Permissions

Read this article

Share

## ABSTRACT

This paper studies the risk assessment of semi-nonparametric (SNP) distributions for leveraged exchange trade funds, (L)ETFs. We applied the SNP model with dynamic conditional correlations (DCC) and EGARCH innovations, and implement recent techniques to backtest Expected Shortfall (ES) to portfolios formed by bivariate combinations of major (L)ETFs on metal (Gold and Silver) and energy (Oil and Gas) commodities. Results support that multivariate SNP-DCC model outperforms the Gaussian-DCC and provides accurate risk measures for commodity (L)ETFs.

KEYWORDS:

Gram-Charlier

DCC

expected shortfall

backtesting

commodity ETF

## Acknowledgments

We also are grateful to two anonymous referees, Chris Adcock, Andreas Hoepner and the rest of the participants of the Recent Developments in Econometrics and Financial Data Science conference held in Reading 2017.

---

## Disclosure statement

No potential conflict of interest was reported by the authors.

---

## Notes

1 Another variant is to employ  $G_2(x) = \exp(x)/(1 + \exp(x))$ , thus  $g_2(x) = \log(\exp(x) + 1)$ , as suggested by Fissler, Ziegel, and Gneiting ([2016](#)). We also implement this function as a check on the robustness of the test.

2 The reason to choose these three leveraged ETFs is because they are the largest commodity LETFs by total assets for 2018 according to the ETF Database ([ETFdb.com](#)). More details are found in [Appendix A](#).

3 Important events related to (L)ETFs that affected financial markets have occurred in the three analyzed periods. In 2017, A LETF was blamed for highly fluctuations in gold stock prices from Toronto to Sidney. In September 2016 the Bank of Japan hit a record in ETF (tracking the Nikkei 225) purchase (before May 2018) and then diminished its stock purchases. The stock market crash in 24 August 2015 was, in part, caused by ETFs trading. Source: Financial Times and Bloomberg news.

4 Source: McKinsey Corporate Performance Analytics.

5 The rolling window procedure results in higher forecast accuracy than other (recursive) backtesting procedures and its use seem to be analytically convenient in economic time series (Giacomini and White, [2006](#)).

---

## Additional information

### Funding

This work was supported by the Spanish Ministry of Economics and Competitiveness under grant ECO2016-75631-P; FAPA-Uniandes under grant P16.100322.001; and Junta de Castilla y León under grant SA072U16. We gratefully acknowledge these institutions for their funding.

---

### Related research

People also read

Recommended articles

Cited by  
12

## Information for

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

## Opportunities

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

## Open access

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

## Help and information

[Help and contact](#)

[Newsroom](#)

[All journals](#)

[Books](#)

## Keep up to date

Register to receive personalised research and resources by email



Sign me up



Copyright © 2026 Informa UK Limited [Privacy policy](#)

[Cookies](#) [Terms & conditions](#) [Accessibility](#)

Registered in England & Wales No. 01072954  
5 Howick Place | London | SW1P 1WG

 Taylor and Francis  
Group