

DISCUSSION ON THE PAPER
“RISK MEASURES WITH VOLATILITY RISK”

Servaas van Bilsen

Netspar Pension Day

Thursday, October 1, 2015

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- The paper studies the impact of volatility risk on **Value-at-Risk** and **Expected Shortfall**.
 - ▶ Highly relevant for the financial sector!
- Predictive density of a financial return depends on
 - ▶ the density of the financial return conditional on its variance and
 - ▶ the density of the variance

$$p(r) = \int p(r|\sigma^2) p(\sigma^2) d\sigma^2$$

SUMMARY

- Heterogeneous Auto Regressive (HAR) model for realized volatility.
- Two experiments:
 - ▶ Experiment 1: Impact of different distributions of the innovations on the risk measures.
 - ▶ Experiment 2: Impact of different degrees of volatility uncertainty on the risk measures.
- The paper also studies the impact of correlation risk on risk measures.
- The paper finds that higher volatility uncertainty leads to a fatter tailed distribution.

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- Paper is still work in progress.
- Motivate that volatility risk is not small.
 - ▶ Why do you consider the HAR model?
- Why do you consider both *VAR* and *ES*? Results are quite similar.
- *VaR*(5%) for the normal density is always higher compared to the mixture densities. What can we learn from this? Maybe you want to focus only on *VaR*(1%).
 - ▶ Why do you not compare the mixture densities with the normal density?
- Figure 2: explain why some lines lie below one.