

## **Value at Risk and Expected Shortfall of Firms in the Main European Union Stock Market Indexes: A Detailed Analysis by Economic Sectors and Geographical Situation**

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**Abstract :** We have analyzed extreme movements of the main stocks traded in the Eurozone in the 2000-2012 period. Our results can help future very-risk-averse investors to choose their portfolios in the Eurozone for risk management purposes. We find two main results. First, we can clearly classify firms by economic sector according to their different estimated VaR values in five of the seven countries we analyze. In special, we find sectors in general where companies have very high (telecommunications and banking) and very low (petroleum, utilities, energy and consumption) estimated VaR values. Second, we only find differences according to the geographical situation of where the stocks are traded in two countries: (1) all firms in the Irish stock market (the only financially rescued country we analyze) have very high estimated VaR values in all sectors; while (2) in Spain all firms have very low estimated VaR values including in the banking and the telecommunications sectors. All our results are supported when we study also the expected shortfall of the firms.

**Keywords :** risk management, firms, pareto tail thickness parameter, GARCH-type models, value-at-risk, extreme value theory, heavy tails, stock indexes, eurozone

**Conference Title :** ICBEF 2015 : International Conference on Business, Economics and Finance

**Conference Location :** Paris, France

**Conference Dates :** June 25-26, 2015