Extreme Co-movements and Extreme Impacts in High Frequency Data in Finance

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Extreme co-movement and extreme impact problems are inherently stochastic control problems, since they will influence the decision taken today and ultimately influence a decision taken in the future. Extreme co-movements among financial assets have been reported in the literature. However, extreme impacts have not been carefully studied yet. In this paper, we use the newly developed methodology to further explore extreme co-movements and extreme impacts in financial market. Particularly, two FX spot rates are studied. Based on the results of our analysis with FX returns, we conclude that there exist extreme co-movements and extreme impacts in FX returns and care has to be taken when we employ portfolio optimization models, especially models without the ability of handling extreme dependencies.

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