



# Propositions

Attached to the thesis

## On Extreme Value Statistics

maximum likelihood  
extremal rainfall

portfolio optimization  
Internet auctions

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## I

If the extreme value index is known to be positive, the Hill estimator is the maximum likelihood estimator. If the extreme value index is positive but the positivity is unknown, the Hill estimator is still a suitable approximation of the maximum likelihood estimator.

*(Chapter 2)*

## II

Formally, the speed of convergence of the maximum likelihood estimator for the extreme value index  $\gamma$  lying in between  $-1$  and  $-1/2$  has the same form as that in the case  $\gamma > -1/2$ . However, it is in fact less efficient to apply maximum likelihood in the former case.

*(Chapter 3)*

## III

Diversification of a portfolio does not necessarily lead to lower risk.

*(Chapter 5)*

## IV

For a tourist who stays in Amsterdam and intends to visit the Keukenhof, as it is raining heavily in Amsterdam, he might have a second thought since there is a 53% chance that the Keukenhof is experiencing a heavy rainfall on the same day.

*(Chapter 6)*

## V

If a well-advertised Internet auction attracts the entire world population to check it, the number of active bidders who really place a bid will still be very low, say, less than 45.

*(Chapter 8)*

## VI

Diversification may reduce individual risk. However, at the same time it can increase systemic risk.

## VII

Risk-averse people should take the risk of applying Extreme Value Theory.

## VIII

Doing theoretical research is very risky. It is better to diversify by combining this with some empirical research. However, proposition III still holds.

## IX

Good scientists have a happy-minded personality. Scientists in Extreme Value Theory are even happier.

## X

Extremes in heavy tails are usually more important than extremes in normal distributions. For instance, an extremely tall person may not change the world much, while an extremely clever person may achieve this.

## XI

Who understands does not preach; who preaches does not understand.

*(Lao Zi)*