Value-at-Risk (VaR)

Example:

The Investment Fund ABC currently has a 1,000,000 USD position in the S&P 500 Index.

The Risk Manager of the Fund wants to estimate the tail risk (extreme negative outcomes) of this position based on historical data (and forecasts).

Calculate the minimum loss over a one-day period that will occur with 1% probability:

Use Parametric and Historical VaR-methods.

Value-at-Risk (VaR) - Intuition

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VaR: 27,000 USD

Probability | Loss Size | Time Period

There is a 1% probability that ABC will experience a loss of 27,000 USD or more on any given day.

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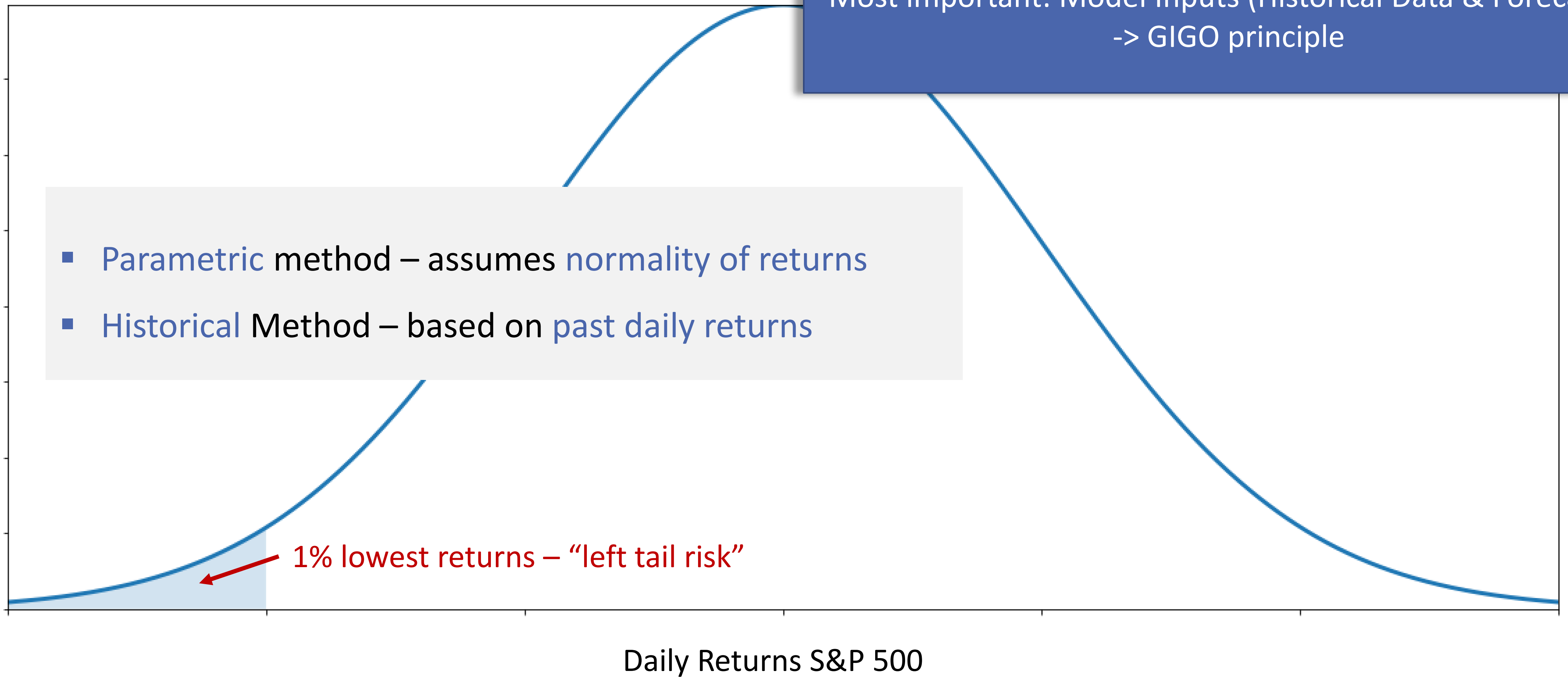
The 1% Daily VaR is 27,000 USD

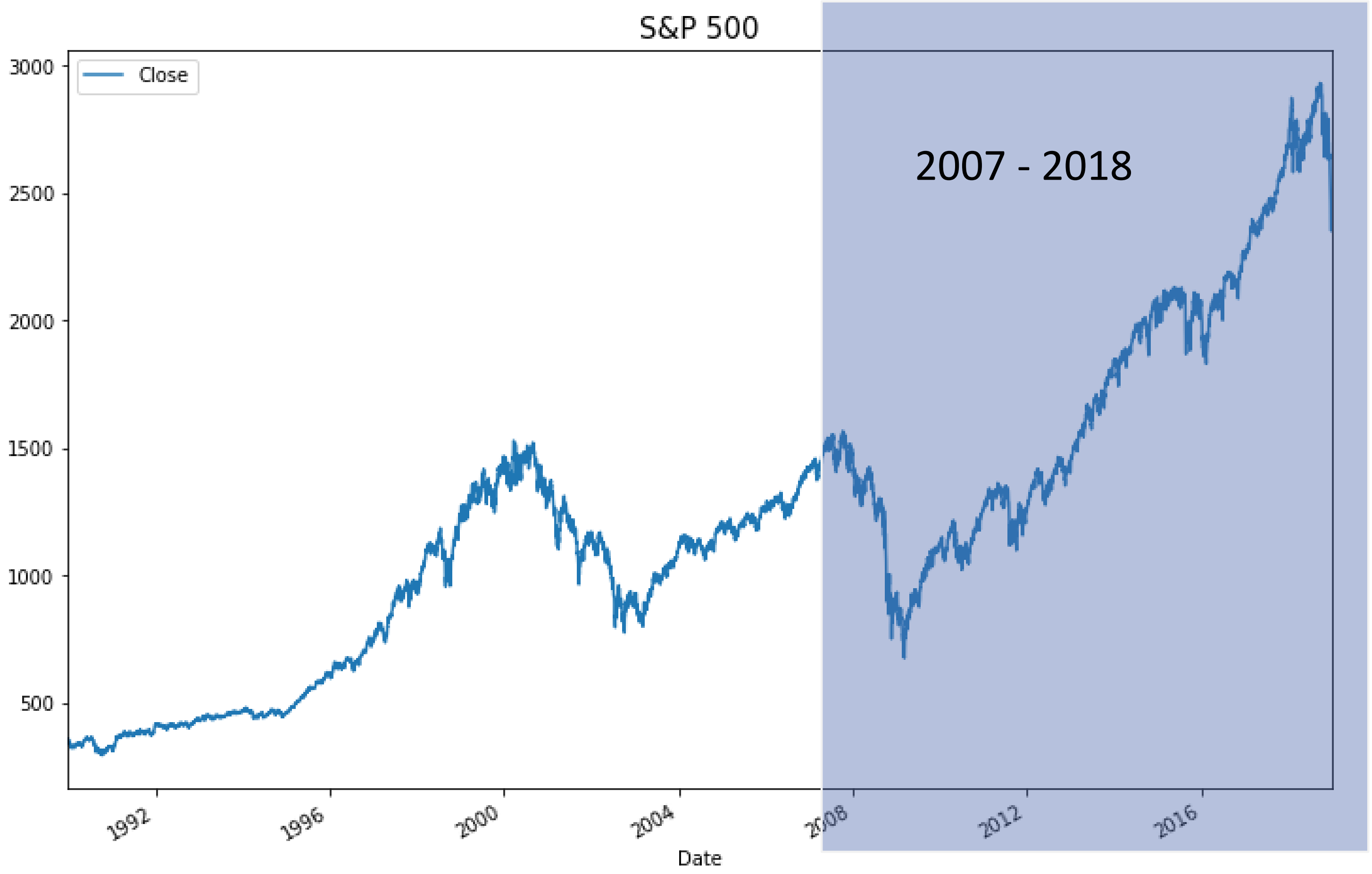
Value-at-Risk (VaR) - Intuition

Most important: Model Inputs (Historical Data & Forecasts)
-> GIGO principle

- Parametric method – assumes normality of returns
- Historical Method – based on past daily returns



Value-at-Risk (VaR) – lookback period (selecting the data)



Data shall be representative

Shall contain a full business cycle

There is no right or wrong.