



# **Research proposal**

**Department of Financial Engineering and Risk Management**

## **Validating Risk Estimation Models in Russian Market**

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## 1. Introduction

- Background
- Problem statement
- Professional significance

## 2. Literature review

## 3. Methodology

## 4. Expected outcomes and conclusion

Time required:  $\approx 7$  min.

## 1. Background

- Value at Risk (VaR) and Conditional Value at Risk (CVaR or ES)
- Question is widely discussed
- Lack of researches

## 2. Problem statement

- VaR is no coherent
- ES is too complicated
- Is it worth it?

## 3. Professional significance

- Researchers
- Risk-managers
- Everyone who...

## 4. Delimitations of study

- Russian stock market

# Literature review

## 1. Beginning

“Investments” (W. Sharp, G. Alexander, J. Bailey)

## 2. Coherent risk measure

“General properties of backtestable statistics” (C. Acerbi, B. Szekely)

## 3. Definitions of VaR and CVaR (ES)

“Quantifying market risk with VaR or ES” (R. Kellner, D. Rosch)

## 1. VaR calculation

- Nonparametric (Historical) VaR
- Parametric (Delta-normal) VaR
- Monte-Carlo simulations

## 3. VaR backtesting

- Kupiec's coverage test
- Method of Basel Committee
- Christoffersen's independence test
- Kupiec's and Christoffersen's joint test
- Backtesting using Lopez's loss function

## 2. ES calculation

- Based on VaR

## 4. ES backtesting

- Wong's saddlepoint technique
- Righi and Ceretta's truncated distribution
- Emmer, Kratz and Tasche's quantile approximation
- Acerbi and Szekely's unparametric models
- The Costanzino & Curran approach

# Expected outcomes

**VaR or ES?**

# Conclusion

- 1. Contribution to the line of research on VaR and ES comparison**
- 2. Is ES(2,5%) better than VaR(1%)?**
- 3. Should ES to replace VaR forever?**



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# Thank you for your attention!

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