

# Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

Student:	Bc. Daniel Šopov, M.Sc.
Advisor:	Petra Andrlíková, MSc.
Title of the thesis:	Modern way of calculation of CAPM coefficient: Beta hedging application

## **OVERALL ASSESSMENT** (provided in English, Czech, or Slovak):

The validity of the CAPM model has been a widely discussed topic for decades. The master thesis proposes a list of challenging approaches how to assess the CAPM coefficients. The author introduces a hedging approach that utilizes various sophisticated methods to make a positive economic value while investing in financial indices.

The main contribution of this work is the comparison of advanced techniques to estimate time varying beta coefficients, starting from a simple rolling time window OLS regression up to quite demanding multivariate models assuming stochastic volatility. I highly appreciate that the author used the hedging performance to evaluate the methods rather than statistical loss functions. This approach is in my opinion more suitable for assessing investment strategies.

The author has proven a high level of his programming skills, which also contributed to an excellent level of this thesis that in my opinion outperforms other diploma thesis especially in terms of its complexity. Therefore, **I recommend this thesis to be consider for extraordinary distinction.**

The author has already incorporated the vast majority of my comments in the thesis and therefore I have only two conceptional questions that may serve as topics for further research.

1. How would the outcome change if we assume nonzero borrowing costs?
2. There has been various multi-factor CAPM models introduced in the academic literature. How would your approach - assessing the simple version of CAPM model (focusing on beta coefficient solely), compete with these mutlti-factor CAPM models that take into account various variables, such as equity and fixed income ratios or macroeconomic variables, such as inflation or interest rate development?

Based on the outstanding level of this master thesis I propose an **“excellent“ grade.**

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## **SUMMARY OF POINTS AWARDED** (for details, see below):

<b>CATEGORY</b>	<b>POINTS</b>
<i>Literature</i> (max. 20 points)	18
<i>Methods</i> (max. 30 points)	30
<i>Contribution</i> (max. 30 points)	28
<i>Manuscript Form</i> (max. 20 points)	17
<b>TOTAL POINTS</b> (max. 100 points)	<b>93</b>
<b>GRADE</b> (1 – 2 – 3 – 4)	<b>1</b>

**NAME OF THE REFEREE:** Petra Andrlíková, MSc.

**DATE OF EVALUATION:** 19.6.2013

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**Referee Signature**

### **EXPLANATION OF CATEGORIES AND SCALE:**

**LITERATURE REVIEW:** *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

Strong                  Average                  Weak  
20                          10                          0

**METHODS:** *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

Strong                  Average                  Weak  
30                          15                          0

**CONTRIBUTION:** *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

Strong                  Average                  Weak  
30                          15                          0

**MANUSCRIPT FORM:** *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

Strong                  Average                  Weak  
20                          10                          0

### **Overall grading:**

TOTAL POINTS	GRADE		
81 – 100	<b>1</b>	= excellent	= výborně
61 – 80	<b>2</b>	= good	= velmi dobře
41 – 60	<b>3</b>	= satisfactory	= dobře
0 – 40	<b>4</b>	= fail	= nedoporučuji k obhajobě