

# Report on Bachelor / Master Thesis

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

<b>Student:</b>	<b>Emir Hečimović</b>
<b>Advisor:</b>	<b>Petr Polák, Msc.</b>
<b>Title of the thesis:</b>	<b>Modeling and Forecasting Volatility: Evidence from Bosnia and Herzegovina</b>

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

The thesis aims to provide empirical evidence on volatility of stock markets in several countries of the former Yugoslavia. Since the literature on the topic is rather scarce the coverage of the analysis constitutes contribution to existing literature on its own.

The thesis well written. It has a logical structure typical for empirical papers and it is therefore easy to be read:

- The introductory part provides the reader with some historical and economic background of the region.
- The literature review shows that the author has a good grasp of the topic that he was well prepared for the main part of the thesis.
- The methodology part is a nice educational introduction to time series analysis with ARMA, ARCH and GARCH models. I find the choice of methods for empirical inference appropriate. The model selection procedure is well documented with references to relevant hypotheses test.
  - My only major objection is the use of p-values that are interpreted as „risk to reject the null hypothesis while it is true...” on several places in the text. While this expression is not clear it indicates the common misunderstanding of the concept – the confusion of false positive rate (probability of false rejection of null) with p-value (the probability of observing the data assuming the null). Also the term “significance level” is confused with “confidence level” (at least once, p. 57). Nevertheless the author then proceeds correctly when rejecting the null hypotheses so the confusion does not have any material effect on the inference provided.
- Empirical results are well described and some economic explanation is provided. Some of the findings are interesting.
  - For example, one of the Bosnian stock market price indexes was found to have a systematically lower volatility compared that the other one. It would be nice to see more discussion on possible explanations of this: differences in investor base, composition of the indexes etc. To my understanding, the number of constituents of the two indexes differs, which also might explain part of that effect, etc...
  - It is estimated that in the aftermath of the global recession the volatility of Bosnian stock market indexes were lower than that stock prices in eurozone. The author concludes that the asynchrony can be used for diversification by investors or even that these markets can „serve as a safe haven for investors at the time of crisis”. This is rather bold statement. Firstly, stock markets can hardly serve as „safe haven”. Secondly, the differences in price volatility does not guarantee differences in price movements. These can still be highly correlated.
  - I would suggest incorporating some other, possibly emerging markets based, benchmark index besides the EURO STOXX 50 that would be more comparable to the eastern European stock market indexes.
- The contribution of the thesis is based mainly on the choice of the topic. In terms of empirical methods the thesis is high standard which is reflected in the score.

**Overall, I recommend the thesis for defense and suggest grade 1 (excellent).**

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

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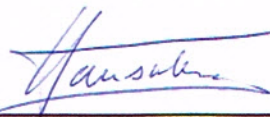
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<b>CATEGORY</b>		<b>POINTS</b>
<i>Literature</i>	<i>(max. 20 points)</i>	<b>20</b>
<i>Methods</i>	<i>(max. 30 points)</i>	<b>25</b>
<i>Contribution</i>	<i>(max. 30 points)</i>	<b>24</b>
<i>Manuscript Form</i>	<i>(max. 20 points)</i>	<b>18</b>
<b>TOTAL POINTS</b>	<i>(max. 100 points)</i>	<b>87</b>
<b>GRADE</b>	<b>(1 – 2 – 3 – 4)</b>	<b>1</b>

**NAME OF THE REFEREE:** *Václav Hausenblas*

**DATE OF EVALUATION:** 14.06.2016



**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	1	= excellent	= výborně
61 – 80	2	= good	= velmi dobře
41 – 60	3	= satisfactory	= dobře
0 – 40	4	= fail	= nedoporučuji k obhajobě