Report on Bachelor / Master Thesis

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

Student:	Alice Nušlová
Advisor:	PhDr. Ladislav Krištoufek Ph.D.
Title of the thesis:	Pairs Trading at the Prague Stock Exchange

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

The bachelor thesis sets as its goal to rigorously assess the performance of pairs trading at the Prague Stock Exchange. As the main inspiration it takes the previous literature that investigated the strategies in the US stock market and the student benchmarks her results against these results.

In the first part, student motivates the thesis by lack of literature on similar topic. Then relevant literature is concisely discussed. In the third and fourth parts, author elaborates on methodology in nice and understandable way, very pleasant to read. The rest of the text describes the empirical results.

Literature: Discussion of relevant sources includes most of the literature that exists on the topic. The discussion is concise and to the point.

Methods: The thesis discusses two pairs trading methods: co-integration approach and sum of squared deviations. Testing for co-integration is done validly using the Engle-Granger procedure. Correct measures of performance of stocks are used. However, the thesis does not operate with hypotheses. Hypotheses are a cornerstone of scientific method and hence it is not clarified what is the paramount object of investigation. I find this to be the only fundamental problem of the text. Yet, the text serves well as a *technical report* of sorts and results could potentially be formed in terms of hypotheses.

Moreover, wider statistical testing could have been applied, for example more elaborate unit-root testing could have been performed.

Contribution: First of all, the thesis is original in terms that it fills in the void of non-existent literature. Second of all, the student correctly uses methods that are beyond standard bachelor curriculum and is moreover able to implement them on relatively rich dataset.

Manuscript Form: The text is written clearly, in readable and mostly academic English. There are many small things that are not standard but at least used consistently throughout the text. Only for future reference:

- Footnote numbers generally follow after punctuation.

- There is a difference between dash and hyphen.

- When first citing Gatev et al. (1999) (and similar), one should list the authors (unless there is more than 3) and only use the *et al.* in the following references.

- It is strongly advised against use of color in pictures, unless necessary. (Figure 3.1) Various line strokes can be used instead of colors.

The thesis is very successful in many ways. Most of all it is coherent and relatively self-sufficient. The student is also able to clearly formulate the concepts she uses. Overall, I find the thesis to be conforming to the level of bachelor theses at the Institute of Economic Studies and if the student is able to defend the text regarding the previous comments and questions, **I recommend the thesis for defense and I suggest the grade „1", i.e. „excellent".**

I suggest the following questions for the defence:

- Please, discuss the relevance of multiplicity (multiple testing) problem in statistics. Does it apply for example to the search of the pairs to trade? Would you – in view of this – revise the part where you claim that cointegration method is unsuccessful because in the 5% of pairs that were found to be cointegrated, the returns were negative?
- What is the philosophical background behind the least SSD? What would mean if the pair is selected by SSD and not by cointegration?

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

CATEGORY		POINTS
Literature	*(max. 20 points)*	20
Methods	*(max. 30 points)*	24
Contribution	*(max. 30 points)*	30
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**92**
GRADE	**(1 – 2 – 3 – 4)**	**1**

NAME OF THE REFEREE: Tomáš Křehlík

DATE OF EVALUATION:　　　*1. 9. 2014*

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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	GRADE		
81 – 100	1	= excellent	= výborně
61 – 80	2	= good	= velmi dobře
41 – 60	3	= satisfactory	= dobře
0 – 40	4	= fail	= nedoporučuji k