Report on **Bachelor / Master Thesis**

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

Student:	**Zdeněk Sýkora**
Advisor:	**Lubomír Cingl**
Title of the thesis:	**Hormones and competitive behavior**

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

Please provide your assessment of each of the following four categories, summary and suggested questions for the discussion. The minimum length of the report is 300 words.

Contribution

The author explores whether cortisol and testosteron influence willingness to compete and take risk. I like the choice of the topic, in part because it lies at the intersection of fields – biology, psychology and economics, and also because it is unusual for IES students to delve into an emerging and unsettled literature. There is still little know about these effects.

The student reanalyses an existing experimetnal data set that has been gathered to explore the effects of exogenously induced stress on risk and competitiveness (Cahlikova et al. 2016), and which contains measures of these hormones. The evidence on the effects of hormones on behavior is still mixed, so this is a useful exercise. Methodologically, a new aspect is that the author can use measures of two distinct hormones within a single sample and thus he can test whether different hormones interact when influencing behavior.This thesis adds some interesting (and surprising) findings and non-findings, and confirms that we still know quite little about the effects of hormones.

Methods

The data analysis is pretty straightfoward and easy to folow. I have only two small comments:

- It would be useful to clarify in the text why the main estimator is OLS, despite the fact that the outcome variable is a binary variable. I agree with using OLS, since the author focuses on interaction effects that are harder to interpret with probit estimators, but it would be useful to mention this choice for the reader.

- Do the regressions control for the experimental manipulations of stress (the original purpose of this experimental data collection of Cahlikova et al 2016)? In principle, stress can influence both hormones as well as behavior, so this seems a natural variable to control for in all estimates.

Literature

The thesis provides a detailled and comperhensive review of the existing literature.It's clear that the author knows the related literature very well.

There is one aspect of the motivation of the thesis that I do not fully understand. The thesis is motivated (the first paragraph) by the observation that financial markets are unstable, and that, potentially, a causal effect of hormones on decision-making can somehow contribute to such volatility. This argument needs some flashing out. How context dependent is the level of testosteron and cortisol, as compared to fixed differences between subjects? So can this study (especially its part on testosteron) speak to the question of quick changes in individual behavior?

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A priori, I would expect that the thesis would rather be more motivated by the question whether hormonal differences can explain gender differences in competitiveness and risk aversion, given that these two traits have been systematically documented to differ across gender. So the question would be whether gender differences in these traits have biological/hard-wired underpinnings, in contrast to due to gender-specific socialization influences. This is mentioned later, but seems to be the first order question that this experiment can most directly speak to, rather than the question about volatility of markets.

Manuscript form

The thesis reads relatively well and has a relatively clear structure.

Summary and suggested questions for the discussion during the defense

To sum up, I believe the thesis fulfills the requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University, and suggest grade B. The author has demonstrated several important skills: came up with a good question, mastered related literature, and can analyse and interpret existing experimetnal data.

A suggested question for the discussion during the defense:

1. Since the author claims that the main contribution of the thesis is the test of dual-hormone hypothesis, I would expect its main logic to be explained earlier in the text. In particular, why biologically should presence/lack of these two horomones interact, rather than having separate/independent effect? Is there some reasons to expect complementarity? Or is it supposed to capture a non-linearity in certain type of biological resources that both of these hormones influence? It would be good to clarify the reasoning behing this hypothesis during defence.

2. Since the data set has been gathered by the supervisor and the research question is very related to his long term research agenda, it would be useful to clarify whether the research question in the thesis has been the idea of the student or the supervisor. Was the author somehow involved in the implementation of the experiment perhaps as a research assistant?

3.One issue is relatively low sample size. Now how does the sample size differs in this study as compared to previous work? Especially if one is after testing interactions effects, separately for men and women, creating n~50, how confidently can one make inferences?

4. Given that testosterone and cortisol levels were not experimentally manipulated, does it make sense to interpret the estimated coefficients as causal tests? Perhaps the hormones correlate with parental socioeconomc background, or other individual characteristics that may influence competitiveness and risk aversion.

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

CATEGORY		**POINTS**
Contribution	*(max. 30 points)*	20
Methods	*(max. 30 points)*	25
Literature	*(max. 20 points)*	20
Manuscript Form	*(max. 20 points)*	15
TOTAL POINTS	*(max. 100 points)*	**80**
GRADE	**(A – B – C – D – E – F)**	**B-C**

NAME OF THE REFEREE: Michal Bauer

DATE OF EVALUATION: May 25, 2018

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Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

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*

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*

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*

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**
91 – 100	**A**
81 - 90	**B**
71 - 80	**C**
61 – 70	**D**
51 – 60	**E**
0 – 50	**F**