

# Report on Bachelor / Master Thesis

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

<b>Student:</b>	<b>Jana Vorlíčková</b>
<b>Advisor:</b>	<b>RNDr. Michal Červinka, Ph.D.</b>
<b>Title of the thesis:</b>	<b>Least Absolute Shrinkage and Selection Operator Method</b>

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

*Please provide your assessment of each of the following four categories. The minimum length of the report is 300 words.*

### **Contribution**

The student wrote an interesting thesis concerning the state of the art machine learning methods. The exact contribution of the thesis could be a little bit more spelled out. What gaps in the literature is the thesis aiming to fill?

### **Methods**

I have no major objections to the theoretical explanation of the method. One thing I personally was missing in the theoretical part was the relationship with the Bayesian treatment of the lasso and the discussion on the advantages and disadvantages of classical and Bayesian estimation. But that certainly is beyond the scope of the bachelor thesis, nevertheless, Bayesian approaches to lasso and elastic net are becoming popular among empirical macroeconometricians (e.g. see work by D. Korobilis).

Empirical application seems well executed.

### **Literature**

Literature is well cited. If anything, more attention could be given to the discussion of the cross-validation, given its importance in the methodology of these models.

I have one question for the defense:

Could you discuss approaches to cross-validation in the case of autoregressive models, i.e. where the observations are time ordered?

### **Manuscript form**

One minor issue concerns the title of the thesis, which only mentions LASSO, but the thesis itself also considers other approaches (ridge regression and elastic net). So a more general name (something like “approaches to estimation using penalization/shrinkage methods”) would be more suitable. Other than that, the thesis is well structured and uses good English.

Overall, this is well executed Bachelor thesis with an interesting and up-to-date topic. I recommend the grade 1.

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

<b>CATEGORY</b>	<b>POINTS</b>
<i>Contribution</i> (max. 30 points)	25
<i>Methods</i> (max. 30 points)	28
<i>Literature</i> (max. 20 points)	18
<i>Manuscript Form</i> (max. 20 points)	18
<b>TOTAL POINTS</b> (max. 100 points)	<b>89</b>
<b>GRADE</b> (1 – 2 – 3 – 4)	<b>1</b>

**NAME OF THE REFEREE:** Marek Rusnak

**DATE OF EVALUATION:** 30/5/2017



**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