

Report on Bachelor Thesis

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

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| Student: | Jan Pecháček |
| Advisor: | doc. PhDr. Ladislav Křišťoufek, Ph.D. |
| Title of the thesis: | Predicting stock market volatility with Google Trends |

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

The thesis proposes an augmentation of two popular volatility models – GARCH and HAR – by adding a variable, which is usually treated as a proxy of investors' attention – search queries on Google. These approaches are then compared in the in-sample and out-of-sample studies of three specific US stocks. The result is that on average the augmented models outperform the basic ones. However, not always is the dominance statistically significant.

There are two main contributions of the thesis. The first one has been already described above – proposing new models. The second one is obtaining a unique dataset directly from the Google company. Standardly, only the Google Trends index is available for specific search terms. However, the author has been able to obtain time series of the actual search volumes. Note that this is quite an accomplishment.

From the formal perspective, the thesis is well structured and even though it might feel blunt at times, it provides enough background and information for the reader. The literature review is sufficient, keeping in mind that we are dealing with a hot topic with ever growing and evolving research outputs. Methodology is well structured and of a sound level of bachelors studies. And the results are well described and discussed. The author has also shown a high level of programming skills.

I see no major concerns here. The thesis has been regularly discussed and evolved smoothly. **I gladly suggest A as the final grade.**

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

| CATEGORY | POINTS |
|---|---------------|
| <i>Literature</i> (max. 20 points) | 19 |
| <i>Methods</i> (max. 30 points) | 28 |
| <i>Contribution</i> (max. 30 points) | 28 |
| <i>Manuscript Form</i> (max. 20 points) | 18 |
| TOTAL POINTS (max. 100 points) | 93 |
| GRADE (1 – 2 – 3 – 4) | 1 |

NAME OF THE REFEREE: doc. PhDr. Ladislav Křišťoufek, Ph.D.

DATE OF EVALUATION: 29.8.2016

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 |