

Report on Bachelor / Master Thesis

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

Student:	Jaroslav Máca
Advisor:	PhDr. Jiří Kukačka, Ph.D.
Title of the thesis:	Herd Behaviour in Financial Markets: Evidence from the Technology Sector

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

Contribution

Author studies herding behaviour in stocks included in NASDAQ - 100 index. Herding effect, tendency to follow the crowd investments, is captured by cross-sectional absolute deviations (CSAD) and standard deviations (CSSD) of returns. Presence of herding tendency among NASDAQ - 100 components is tested using a number of ordinary least squares regressions, where CSAD or CSSD are regressed on various market-related variables. These regressions follow testing setups previously used in the literature and are only reapplied on NASDAQ - 100 stocks. Firstly, CSSD is regressed on dummy variables representing if observation belongs to the left or to the right tail of the distribution (5% and 1% cutoffs). Author obtains results consistent with the U.S. stock market results from the literature documenting no evidence of herding. Secondly, CSAD is regressed on absolute values and squares of benchmark returns. However, it is not clear to me what author means in the interpretation of the results as he writes: *“According to the given information background, we state that investors decision-making can be described as “too random”, being affected by inevitable uncertainty connected to investing in financial markets, which results in “chaotic” findings on an aggregate level.”* (Please see suggested questions for the defense).

Both of the regressions above are further repeated on subsamples representing period of high and low market volatility.

Thirdly, the author studies the effect of adding CSAD within FAANG stocks (Facebook, Amazon, Alphabet, Netflix and Google) as well as the square of FAANG returns to the regression. He finds a significant positive relationship between CSAD of FAANGs and overall CSAD.

Lastly, the author studies the effect of COVID on his results by repeating the whole analysis on restricted sample using only year 2020.

Methods

Cross-sectional absolute deviations and cross-sectional standard deviations are used as proxies for the herding behaviour. They are used in the regression setting. Simple ordinary least squares is used repeatedly on various subsamples of original dataset and with small number of independent variables.

In terms of the empirical setup, only constituents of NASDAQ 100 present at the end of the time period are used. This might lead to survivorship and selection bias. Since time period used in the analysis stems only from 2011 to 2021, it would be straightforward to include all stocks that were at least once part of the NASDAQ 100 as this information is publicly available.

Literature

Literature review is split into 4 parts: *Traditional finance*, *Behavioural finance*, *Herd behaviour (overview)* and *Herd behavior (specific)*. I understand that the author tries to motivate the study of herding behavior by pointing out certain shortcomings of the mainstream approach, however, in my opinion this is done quite selectively and does not convince me that the author appreciates the depth

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of the “traditional finance”. Papers mentioned in the *Traditional finance* part appear to be selected quite randomly and without clear connections. In *Behavioural finance* part, sentences sometimes appear ordered without meaning, e.g. “Moreover, Grossman & Stiglitz (1980) argue that such market actually cannot exist. Nonetheless, Fama (1970) assumes that stock prices are unpredictable, meaning, they follow a random walk and nobody can beat the market in the long run.” This makes text very hard to follow and makes it feel more like a collection of very loosely connected paragraphs briefly touching individual topics rather than a complete literature review.

On the other hand, parts of the literature review covering the herd behaviour directly are much better at clearly introducing the literature and explaining links between the papers. As a side note, using parentheses in subsection titles: (specific) and (overview) somehow beats the purpose of titles.

Manuscript form

Thesis readability suffers strongly from frequent misuse of the English language including grammatical errors as well as strange sentence formulations. Author is also mixing tenses and styles (passive vs. active)

Introduction does not really introduce what the author is doing himself. In the last 2 paragraphs the author vaguely mentions abbreviations of methodologies but does not really introduce the topic. Figures and tables are not self-sufficient. One-sentence descriptions are not enough, e.g. figure 3.1. does not mention units on the x-axis and Table 4.1 with descriptive statistics does not mention units time period or frequency.

There is excessive usage of quotation marks (“”). It is not clear what is author trying to communicate when he uses them, perhaps that the vagueness of the underlying statement, e.g. ‘Therefore, the efficiency of the market is said to hold if “sufficient number” of investors behave rationally (Fama 1970)’

Some of the statements in the thesis would fit better into journalism than academic work, e.g. “However, given both the hope of inventing vaccine and the greed of cheap money thanks to macroeconomic stabilization policy, markets recovered very fast.”

Summary and suggested questions for the discussion during the defense

- In Table 5.1. you report coefficients for left-tail and right-tail dummy variables and write that: “at investors tend to differentiate stocks more during largest market downturns than during rather uniform market upswings.” How do you know if these coefficients are significantly different? How would you test that?
- Explain in detail results in Table 5.3, specifically interpret the positive and significant coefficient for the squared market return.
- Table 4.1: What are the units and why is there such a big difference between CSAD_exclFAANG and CSAD_FAANG?

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- (Mathematically) show what you write in the thesis: *“It can be shown that, according to CAPM, relationship between dispersions and market return is not only generally increasing but specify its exactly linear form.”*
- What is the motivation behind using logarithmic returns instead of simple rate of returns in your analysis?
- Explain Newey & West (1987) adjustment in your OLS application. Why is it necessary?

The results of the Urkund analysis do / do not indicate significant text similarity with other available sources.

In my view, the thesis fulfills the requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University, I recommend it for the defense and suggest a grade C.

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

CATEGORY	POINTS
<i>Contribution (max. 30 points)</i>	21
<i>Methods (max. 30 points)</i>	25
<i>Literature (max. 20 points)</i>	13
<i>Manuscript Form (max. 20 points)</i>	12
TOTAL POINTS (max. 100 points)	71
GRADE (A – B – C – D – E – F)	C

NAME OF THE REFEREE: Martin Hronec

DATE OF EVALUATION: 9.1.2022

Digitally signed, 9.1.2022, Martin Hronec

Referee Signature

