

Report on Master Thesis

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

Student:	Bc. Pavel Munduch
Advisor:	Prof. PhDr. Ladislav Křišťoufek, Ph.D.
Title of the thesis:	Using spin model to determine FFTx connectivity market potential in the Czech Republic

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.

From the beginning, this has been a rather ambitious and hence also risky topic for a thesis. Ising models have been used repeatedly in finance and various other applications but it has always been very challenging to find a compelling story for the parallels between the model of ferromagnetism and a specific application/utility outside of the natural sciences. As this thesis is somewhat on the crossings of economics, engineering, marketing and probably other sciences, finding such story and deeper roots for the specific parameters really turned out to be a bit problematic. Either way, Pavel has proved his technical skills of an excellent level, even though the final presentation is certainly not perfect, also due to rather limited time left for proper finalization of the text after the simulations and computations had been carried out.

Contribution

My overall feeling of the thesis' contribution is somewhat mixed. Pavel has worked really hard on the models but the thesis misses a clear-cut or straightforward contribution line it could present as a one-liner. There are several interesting things that are also described shortly in the Methods section of this review such as the matrix dissimilarity measure, various ideas about starting positions of the entry lattices and some others.

Methods

This is certainly the strongest part of the thesis – carrying out the simulations, introducing new measures specifically for this type of problems, describing the model and its development.

Literature

The thesis covers most of the important topical literature. There are some important papers missing (mostly Bornholdt's paper on Ising model in finance which was quite groundbreaking in the field) and there are imperfections in the references list.

Manuscript form

The structure of the thesis feels like three separated parts that could easily be presented on their own. E.g., do we really need the Czech Republic perspective? How does the literature review really connect to the aims of the paper? The form by itself is nice but the structure is quite lacking.

The thesis shows an above-average score (36%) in Urkund which is, however, due to an earlier draft submitted to Urkund as a part of the Diploma Thesis Seminar. Otherwise, the overlap with other texts seems within the standard limits.

Summary and suggested questions for the discussion during the defense

My overall summary of the thesis is C, even though with quite a heavy heart as I know how much time Pavel spent on it. My questions for the defense:

Report on Master Thesis

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

Student:	Bc. Pavel Munduch
Advisor:	Prof. PhDr. Ladislav Krištoufek, Ph.D.
Title of the thesis:	Using spin model to determine FFTx connectivity market potential in the Czech Republic

- How would you summarize your main contributions in just a few sentences?
- Can your findings or introduced methodological innovations be used in other applications of Ising model?

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

CATEGORY	POINTS
<i>Contribution</i> (max. 30 points)	15
<i>Methods</i> (max. 30 points)	30
<i>Literature</i> (max. 20 points)	16
<i>Manuscript Form</i> (max. 20 points)	12
TOTAL POINTS (max. 100 points)	73
GRADE (A – B – C – D – E – F)	C

NAME OF THE REFEREE:

prof. PhDr. Ladislav Krištoufek, Ph.D.

DATE OF EVALUATION: 28. 1. 2021

*Digitálně podepsáno (28. 1. 2021):
Ladislav Krištoufek*

Referee Signature