

Report on Bachelor / Master Thesis

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

Student:	BSc. Tereza Vildová
Advisor:	PhDr. Michael Princ
Title of the thesis:	European Stock Market Integration

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

To begin with, let me note that I have been researching this methodology for some of my papers and some comments might be well beyond reasonable scope of master thesis. The offered comments will hopefully be interesting for the author should she pursue further research on the topic. In the evaluation, though, I tried to assess only based on what I deem reasonable for master's level.

In the thesis, author applies a well-established methodology in estimating the integration of the European stock markets, and the effects of accession on the integration.

Some remarks to text in no particular order:

- If I understand author's approach correctly, she uses differenced volatilities for the estimation. While application on differenced does provide insights about the connections (or in author's words integration) between the markets, it artificially diminishes the long-run connectedness. (This result seems to be relatively new, due to our paper with J. Baruník *Measuring the frequency dynamics of financial and macroeconomic connectedness*, if you are interested in following a formal treatment.)
- I find it relatively unfortunate that VAR specifications that were fitted were not included and there seem to be no robustness check with respect to H .
- In some cases, equations would work better than mere text. For example: *First, natural logarithms are taken from the close prices, and then the returns are calculated as the difference of the log price with its value from the previous period (in our case, the previous day). To get the volatility, the standard deviation of the logarithmic returns is calculated and multiplied by the square root of the number of periods in a year to get it annualised, in this case the square root of 252 (as there is 252 working days in a year).*
- There is no discussion about standard errors of the spillover estimations that are provided. While this might be strategic for papers to tacitly neglect this feature (for example Diebold papers), a mention of this and reason why it is so would be advisable for master thesis as it demonstrates the understanding of the concepts. Without them, it is hard to understand then whether author understands the randomness feature of the spillovers.
- The author could have paid a bit more care to economically motivating the question behind the thesis and connecting it to the spillovers framework. Maybe motivating the concept of integration and spillovers with a hands-on example would make the exposition much more attractive.
- The depiction of the series in question (maybe deferred to appendix) would be helpful to make a better picture about what data are you trying to model.

Literature

The literature and its review is done properly reflecting most of the findings in the literature. Nitpicking, author's results could have been put into comparison and contrast with the literature in conclusion. Moreover, the more recent methodology of Diebold and Yilmaz could have been discussed in a bit more detail and give reasons to chose the one that you propose.

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Methods

The author chose appropriate methods for investigation of the phenomenon in question. The methods are well-described with reference to relevant literature. The only comment from me would be to better expose some steps of modelling: choosing the number of lags in the VAR model, various specifications of H as a robustness check. Wouldn't the series be trend stationary? These are crucial as the spillover estimates are computed from the VAR so the reader should be persuaded that the VAR is well-estimated.

Contribution

The main contribution lies in the connection of the spillovers framework and the assessment of the integration of the European markets and the effect of accession to European Union. The methods stem from methods that are standard and appropriate on the master's level of studies. Given that the author would expose more carefully some details of estimation and better motivate the thesis, it could be a sound contribution to the discussion about the integration of EU.

Manuscript form

The manuscript is of good form, however, occasionally things might deserve a bit more care. For example, Table 3.1.1 could be made to be better readable transposing it and providing only relevant number of digits. Headers of Table 5.2.1, the literature is in rather non-standard form.

For the defense I **suggest the following questions:**

- Please elaborate on how you chose the specification of VAR estimates and what is the difference between the stability and stationarity conditions in the VAR modelling.
- Suppose that the original series (volatilities) that you have in your sample are co-integrated. (As a matter of fact, integration was investigated through co-integration several times.) Now suppose, that after differentiation the series have no spillover at all. Are the markets then integrated? How would you rephrase your results in this case?
- There is an underlying assumption that the more integration the better. Bringing this observation *ad extremum* the perfect integration—at least in the sense of spillover framework—would be that all the markets behave exactly the same in terms of their volatilities. Hence, the exposition to risk should be the same everywhere in Europe. Why should not we want more diverse stock markets within European Union?

Overall, the thesis is very well-done, methodology is exposed properly, most of the empirical work, too. The results seem to be a bit overwhelming (too much of it, probably should be selected to the most important/interesting ones) to me but that might be a matter of taste. The form is acceptable without major problems.

For these reasons I **suggest the thesis for defense and propose the grade "A"**.

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

CATEGORY	POINTS
<i>Literature</i> (max. 20 points)	18
<i>Methods</i> (max. 30 points)	25
<i>Contribution</i> (max. 30 points)	27
<i>Manuscript Form</i> (max. 20 points)	18
TOTAL POINTS (max. 100 points)	88
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE: Mgr. Tomáš Křehlík, M.A.

DATE OF EVALUATION: 31. 8. 2015



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