

# Report on Rigorous Thesis

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

<b>Student:</b>	<b>Mgr. Filip Šmolík</b>
<b>Advisor:</b>	<b>Mgr. Lukáš Vácha, PhD.</b>
<b>Title of the thesis:</b>	<b>Time-scale analysis of sovereign bonds market co-movement in the EU</b>

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

The thesis examines mutual dependence and co-movement of 10 years sovereign bonds of the 11 EU members. For the analysis, the countries are further divided into three groups: the core, the periphery and the states outside the Eurozone. The dataset contains daily data ranging from January 2001 to December 2013. The analysis is focused mainly on fluctuations of co-movement in the period of financial crisis. As a main methodological tool author uses the wavelet decomposition, which allows studying dynamics co-movement in time as well as at scales.

An extensive literature review (Ch. 2) covers mainly sovereign debt crisis, co-movement and contagion in the EU. In the last part of the Chapter author clearly formulates the hypotheses. This chapter is well written and it is evident that author understands the topic. Chapter 3 covers the wavelet methodology. It is again very well structured. Author explains in detail the methodology and motivates the time-scale approach for the analysis of non-stationary time series (Figure 3.1). The Chapter is accompanied with useful literature review of wavelet application in finance and macroeconomics. The Chapter four describes the dataset, based on the data structure author explains clearly motivation for wavelet decomposition (for example Figure 4.3).

The Chapter 6 summarizes results of multiple wavelet correlation (multivariate correlation). Results reveal interesting difference in the reaction of the states outside of the Eurozone and the core Eurozone states. Further, a contagion on the bond market is examined in Chapter 7 where author compares two important break dates for the contagion: the fall of Lehman Brothers and the Speech of Papakonstantinou (20.10.2009: the declaration of new budget deficit of Greece). Interesting results of this chapter are compared with the current literature devoted to this topic. In the last part of empirical results (Chapter 8) author offers different view on the wavelet coherence as it tests whether there is a significant heterogeneity in bivariate wavelet correlation in a period of one year (non-overlapping periods). Author defines new index in order to compare heterogeneity of correlations.

To conclude, the thesis is well written with clear structure. Filip demonstrates excellent ability to work with relevant literature. Methodology apparatus is relevant to the research topic being investigated and all methods are clearly described. The contribution of the thesis is very strong. Thus, I recommend the thesis for defense.

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

CATEGORY	POINTS
Literature (max. 20 points)	20
Methods (max. 30 points)	29
Contribution (max. 30 points)	30
Manuscript Form (max. 20 points)	28
<b>TOTAL POINTS</b> (max. 100 points)	<b>97</b>
(doporučuji, nedoporučuji)	Doporučuji

**NAME OF THE REFEREE:** : Mgr. Lukáš Vácha, PhD.



**DATE OF EVALUATION:** 10.10.2015

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**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		
81 – 100	= excellent	
61 – 80	= good	
41 – 60	= satisfactory	
0 – 40	= fail	= nedoporučuji k obhajobě