

# Report on Bachelor / Master Thesis

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

<b>Student:</b>	<b>Ondrej Filip</b>
<b>Advisor:</b>	<b>Karel Janda</b>
<b>Title of the thesis:</b>	<b>Food vs. Fuel: The Role of Bioenergy</b>

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

This is a report of advisor, provided by Karel Janda.

This Master Thesis is an applied econometric thesis using the state of the art methods from the most recent economics literature on a very current data. The Thesis is well done along all relevant dimensions and it clearly deserves excellent grade.

The thesis is dealing with very important and interesting topic of price dependence among prices of biofuels and related commodities. This topic is a source of a quite large recent academic research and it is also quite an important topic in applied policy analysis. The question of biofuels and their relation to food and fuels commodities is a very frequented topic in agricultural, development and environmental economics. The potential of biofuels to contribute to combating harmful CO<sub>2</sub> emissions and the controversies connected with using agricultural land for production of biofuels instead of for something else (food crops, natural rainforest etc.) are very important topics closely related to the future of our civilization and to the development paths used by citizens and government all over the globe.

The thesis is closely based on recent papers in leading field journals:  
Kristoufek, L., K. Janda, & D. Zilberman (forthcoming 2016): "Co-movements of ethanol related prices: Evidence from Brazil and the USA." *GCB Bioenergy*,  
Vacha, L., K. Janda, L. Kristoufek, & D. Zilberman (2013): "Time– frequency dynamics of biofuel–fuel–food system." *Energy Economics* 40(C): pp. 233–241.  
Kristoufek, Ladislav; Janda, Karel and Zilberman, David. "Regime-dependent Topological Properties of Biofuels Networks." *European Physical Journal B* 2013, 2(86), article 40, 12 pages.  
Kristoufek, Ladislav; Janda, Karel and Zilberman, David. "Correlations Between Biofuels and Related Commodities Before and During the Food Crisis: A Taxonomy Perspective." *Energy Economics* 2012, 5(34), pp. 1380–1391.

The thesis takes the methods used in these papers and applies them to a new data. Comprehensive up-to date data coverage is one of strong points of this thesis. Based on careful literature review of the related literature (importantly aided by a review article Serra, T. & D. Zilberman (2013): "Biofuel-related price transmission literature: A review." *Energy Economics* 37(0): pp. 141 – 151.), the author selects all the relevant data used in the various literature sources and includes this data into his analysis. In such a way, the analysis of price connections of biofuels was never done with so wide coverage as it is done in this thesis.

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The thesis is taking as its starting point recent articles in leading field journals, it combines these articles and replicates their findings with the most recent data. So while the weak point of the thesis is no inclusion of any significant original idea, the excellent execution of the state-of-the-art research is without any doubt important feature of the thesis. The thesis provides a real research contribution to the important research and public policy field.

The thesis is quite substantial in the sense that there is no long descriptive introductory/literature review chapter. The thesis after a very brief and well written introduction+literature review immediately concentrates on the execution of the research part of the thesis. Given that the thesis is very closely based on the already mentioned research articles of Kristoufek et al. and on the review paper of Serra and Zilberman (2013), the author did not really engage in deep and comprehensive literature search. The connection and comparison with relevant most recent, most relevant and most sophisticated alternatives for the analysis price connections among biofuels and relevant other price series is slightly weaker than it could be in an optimal case.

The thesis is well written. All the formal parts of the thesis are very well executed. The student himself located and secured needed data sets. The student showed considerable effort and initiative during the preparation of this thesis.

Questions for defense:

What are the implications/differences in using spot or futures prices in this analysis?

Why to require single connection (minimal connections) in minimal spanning trees? The requirement of single connection makes sense for example in original Boruvka's problem of electrification of Moravia. But there is not such a clear-cut for the topic of finding price connections. What about the connections which are close to 1.4 (corresponding to zero linear correlation)? MST/HT analysis is strongly biased in direction of minimization of distances (i.e. in the direction of positive correlation). What about negative correlation? Do not we miss something there? Is the MST/HT really useful/applicable to economic price series? This is much wider question than the question of biofuels, it is general question about applicability of MST/HT to economic price series data.

Was there any recent development in the partial wavelet coherence in the last few months? (Taking into account multiple commodities, not just one. Defining and representing phase difference in the partial wavelet coherence analysis).

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The connection of MST/HT and wavelet analysis is not really strong in this thesis. Could you substantiate that a little more?

I recommend the thesis for defense.

In the case of successful defense, I recommend the grade „excellent“ (grade 1).

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

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

**NAME OF THE REFEREE:** *Karel Janda*

**DATE OF EVALUATION:** *June 1, 2015*

*Karel Janda*

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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	GRADE		
81 – 100	<b>1</b>	= excellent	= výborně
61 – 80	<b>2</b>	= good	= velmi dobře
41 – 60	<b>3</b>	= satisfactory	= dobře
0 – 40	<b>4</b>	= fail	= nedoporučuji k obhajobě