

Report on Master Thesis

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

Student:	Bc. Vojtěch Fučík
Advisor:	doc. PhDr. Ladislav Křištofuk, Ph.D.
Title of the thesis:	Portfolio construction using hierarchical clustering

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

Please provide your assessment of each of the following four categories. The minimum length of the report is 300 words.

The thesis aims to compare portfolio selection methods based on the graph theory with the standard Markowitz portfolio selection. The idea is based on a claim made in the literature that the peripheral stocks, i.e. the ones that are far from the center of the cluster/market, provide better diversification opportunities compared to the ones closer to the center. Such claim is not confirmed by the current study, at least not completely. The Markowitz method still seems to be performing well compared to the newly proposed ones.

Contribution

The thesis contributes to the current literature which looks at the portfolio selection (but the new view is broader, more general) beyond simple correlation coefficients. Stock markets can be seen as networks and as such, measures from the complex systems and network theory can be utilized in portfolio selection. The contribution is thus rather strong as the author proposes specific measures of centrality and ways how to transform them into portfolio weights, or more precisely the share of wealth spent on specific stock. The thesis also opens some new venues towards studying the issue. Even though the results are not “shocking”, this might easily be due to the dataset, or specifically the analyzed period which is rather short but more importantly, it covers the period when pretty much “everything grows” and, as we know, during such times, diversification is not that important. It would be much more interesting to see the comparison before the Global Financial Crisis.

Methods

The methodology is well described and in a sufficient detail. The utilized methods are mostly above the standard IES curriculum. Still, a reader can easily understand the topic from the text, even if one is not an expert.

The only trouble I see is represented by Table 4.1. Are really all the betas practically zero? This is hard to believe as the coefficients of determination are relatively high. Is this a typo?

Literature

The thesis is based on the well-selected topical literature. Referencing is fine, I see no issues here.

Manuscript form

The text is well-written, well-structured and it reads well. Even though most of the graphs are quite beautiful, some of them not so much (e.g. 5.8, 5.10, 5.14). Also, the text is a mixture of the American and British English.

Overall, the thesis is nice piece of work, well-motivated, clearly presented. I happily suggest grade A (with a total of 92 points) for the defense, yet still I have two questions:

- *Table 4.1: Are really all the betas practically zero? This is hard to believe as the coefficients of determination are relatively high. Is this a typo?*
- *What risk-free rate is used?*

Report on Master Thesis

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

Student:	Bc. Vojtěch Fučík
Advisor:	doc. PhDr. Ladislav Krištofuk, Ph.D.
Title of the thesis:	Portfolio construction using hierarchical clustering

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

CATEGORY	POINTS
<i>Contribution</i> (max. 30 points)	28
<i>Methods</i> (max. 30 points)	27
<i>Literature</i> (max. 20 points)	20
<i>Manuscript Form</i> (max. 20 points)	17
TOTAL POINTS (max. 100 points)	92
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE: doc. PhDr. Ladislav Krištofuk, Ph.D.

DATE OF EVALUATION: 6.9.2017



Digitally signed by Ladislav Krištofuk
DN: cn=Ladislav Krištofuk, o=Faculty of
Social Sciences, Charles University in
Prague, ou=Institute of Economic Studies,
email=ladislav.kristoufek@fsv.cuni.cz, c=CZ
Date: 2017.09.06 11:39:38 +02'00'

Referee Signature