

Report on Bachelor / Master Thesis

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

Student:	Bc. Jiří Jílek
Advisor:	Tomáš Jandík MA MSc MRICS
Title of the thesis:	European Real Estate Investment Trusts: Analyzing Correlation with a DCC-GARCH Model

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

The Master Thesis focuses on interdependencies between European real estate investment trusts (REITs) and other European base financial assets. The thesis examines dynamics of correlation in time, in time period before and in the current financial crisis. The first part is devoted to a very extensive description of REITs (21 pages, almost half of the thesis). The second part of the thesis consists of theoretical background for the Dynamic Conditional Correlation GARCH (DCC-GARCH) model followed by data description and an empirical part.

The thesis gives an answer to the question whether the investments in real estates, in time of the current financial crises, still provide a diversification benefit for an investor. Using stock indices data, the answer is negative since we can observe increasing correlation of REITs and stocks. Finally, author shows that portfolio diversified through asset classes such as government bonds and commodities can attain better values of Sharpe ratio than a portfolio constructed solely of REITs and stocks.

The Master thesis has an interesting topic, but there are several problems, mainly the estimation of the model and work with the literature. Comments follows in the order of importance

Major Comments:

The first stage of the DCC-GARCH estimate for bonds did not converge. There is a serious problem with the estimation and subsequent interpretation of the results! For example, the estimated value for parameter beta is 0.718 with standard deviation 3481.5. (there is a problem with the alpha parameter as well) - pp. 42, Table 5.1, Bonds).

Work with literature: Orskaug (2009), which is followed very closely in the theory part, is not scholarly relevant reference, it is problematic especially in case of many citations. The reference is probably a master thesis published by Norwegian Computing Center.

Minor comments:

The second section is very large. It contains too extensive description of REITs, which does not help to the consistency and flow of the work.

page 41: "*Lastly, as normality of returns is one of the conditions for a DCC-GARCH model, we needed to adjust our data. In the statistical software that we used, we normalized our data to ensure that this condition is satisfied.*" – The statistical software probably standardised the data or estimation robust to non-normality was used.

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Suggested questions for the defense are:

Why the maturity of risk-free German bonds is that long? Do you expect change in the results in case shorter maturities are used?

How do you comment on insignificant parameter in GARCH estimation? (pp. 42, Table 5.1, Bonds, parameter alpha, beta).

What model (or modifications) can we use when the data are not Gaussian?

Overall the thesis brings interesting analysis of dependence of the European REITs and other asset classes, which can potentially have an interesting contribution. Since there are serious problems in the estimation procedure, a part of the results cannot be fully trusted. Based on my previous arguments, in case the Master thesis will be defended, I recommend “dobře” (satisfactory, 3).

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

CATEGORY	POINTS
Literature (max. 20 points)	10
Methods (max. 30 points)	10
Contribution (max. 30 points)	15
Manuscript Form (max. 20 points)	13
TOTAL POINTS (max. 100 points)	58
GRADE (1 – 2 – 3 – 4)	3

NAME OF THE REFEREE: Mgr. Lukas Vacha, PhD.

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Referee Signature