Report on **Master Thesis**

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

Student:	**Bc. Štefan Lipták**
Advisor:	**PhDr. Jozef Baruník, Ph.D.**
Title of the thesis:	**Forecasting realized volatility: Do jumps in prices matter?**

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

The thesis deals with forecasting of the stock market volatility. It uses a recently developed methodology to disentangle realized volatility and jumps and study the impact of jumps on forecasting within the simple HAR methodology. The empirical results are very interesting as author uses a long time span of 25 years on the stock market, forex and commodity representatives to compare the impact of jumps on the forecasts robustly on various markets. Importantly, this allows author to simply separate the period into the several sub-periods and test if the parameters are stable over time. The most important finding is that the HAR parameters change significantly over time, which points to non-stationarity of the volatility series. While HAR is based on a simple linear OLS estimation, it has been advocated by many researchers recently as the "best-working" model for the volatility modeling and forecasting. This thesis argues that due to non-stationarity, parameters are highly dynamic and HAR can be used only locally (for the short time spans) but not globally. This confirms the important results of Starica and Granger (who used daily data and GARCH methodology), but within state of the art framework of realized variances. Finally, this result is confirmed by the forecasting excercise and HAR is shown to be much more useful when it is used locally up to a 2 year maximum than globally. The larger the period for the in-sample fit, the worse are the forecasting results. If the HAR model was able to capture the volatility dynamics, the opposite should be logically true.

The structure of the thesis is logical, text is well-written, methodology well-described and empirical results are done carefully. Data handling and empirical estimates together with implications from the results are described carefully and intuitively so overal form of the thesis is on a very good level. Over the past year author used my advisory services on the regular (and frequent as well) basis and we have discussed many issues in the methodology as well as text which he managed to incorporate to the submitted version. Thus, I have no additional questions to the defence.

In conclusion, I believe that the thesis is a very solid work in all aspects, author shown strong quantitative skills while working with computationaly demanding high frequency data and finally arrived to a very interesting and potentionally important results for the financial econometrics literature. Thus I fully recommend the thesis of Stefan Liptak to be defended with grade excellent – 1. Due to the originality and contribution of the results I also believe the thesis deserves a consideration for the *"distinction for an extraordinarily good master's diploma thesis"* award.

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

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

NAME OF THE REFEREE: *Jozef Barunik*
DATE OF EVALUATION: 5.9.2012

_____
Referee Signature