

Report on Bachelor / Master Thesis

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

Student:	Bc. Pavel Karas
Advisor:	Doc. Roman Horváth, PhD.
Title of the thesis:	The Czech National Bank Communication and the Yield Curve

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

Author studies in his thesis the effects of the Czech National Bank's communication on the interest rate volatility. He asks if there is any impact of inflation report, minutes and public statements by members of the CNB bank board on the yield curve and tries to quantify this possible relationship. To answer this question author utilizes time series volatility models as GARCH, EGARCH and TARARCH and runs them on three month pribor and czech 10 year government bond. The main finding of the thesis points out that the CNB communication tends to decrease the volatility of interest rate as well as the government bond yield. Statements dated close to the Bank Board meeting have decreased the volatility of analyzed yields.

In the first part of the thesis Pavel shows that he got familiar with literature on central bank communication in great detail. He discusses carefully the arguments supporting central bank information openness. In addition he explains how the transmission of information works. In the second part of the thesis Pavel demonstrates that he has mastered time series econometric techniques. He explains the theory of the following volatility models ARCH, GARCH, EGARCH and TARARCH. Consequently he applies them to find answers to the stated questions.

For the further improvements of the thesis I have following suggestions:

- 1) The chapter on communication is way too long. Moreover, the way it is set up is only partly related to the empirical part of the thesis. You should rather focus on outlining the theory of how the communication may affect the bond prices and consequently empirically test your theory. The punch line motivation of the paper is not clearly stated: the longer tail of the yield curve is nothing else than future risk adjusted short term rates. Short term rates are almost fully in hands of central bank. The communication is the way how the central bank can impact uncertainty about future rates and affect their level and volatility. I believe this should be the leading argument. Your text implies this but one has to hardly search for it between lines.
- 2) By yield curve people usually mean its slope (in your case 10 years bond minus pribor) or term premium. You analyze in your thesis bond prices. Thus, I would change the title of the thesis to ... communication and bond prices.
- 3) I am little bit skeptic about your data source for 10 years bond. The bond must be some generic bond which has to be calculated so it is better to have it calculated by someone credible. I would go for Bloomberg or Reuters.
- 4) **You omit totally the literature on news announcement and bond prices which I believe is closely related to your topic. Look for example at *Ederington, Louis H. and Jae, Ha Lee 1993* or *Fleming J. Michael and Remolana Eli 1997* and others bellow.**
- 5) There is also problem with the reliability of the data in case of long term Czech bonds. Apart from MTS, where Czech govies started to be traded only recently, the announced prices are only indicative. Let me explain, traders quote on Bloomberg their price but when you call them that you want to take the price and let's say buy the bond, he answers: situation on the market has just changed and the price is different. Putting it in other words, traders are not legally bounded to sell or buy for the price they announce. Thus, it is likely that you face some kind of measurement error in long tail of the yield curve.
- 6) You have daily frequency of your data. I think it would be better to use higher frequency data. In daily data you have a lot of information which may be very difficult to control for,

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therefore it is not easy to pick up from the data the effect of the news. Consider following: there was statement by the board member on Bloomberg , the price jumps up 5% in 5 minutes after the statement went public but after one hour the price is corrected to just 2% increase. Later on at that day some other event may come shifting the prices even lower. Looking at the daily changes you would consider all this information as a result of the announcement.

- 7) **Price moves are usually attributed to the surprises about released data relative to the expectations of investors. This proved to be valid in the literature in case of equity as well as bond prices. It would be useful if you explain why in your study any news (inflation report, minutes and comment) has impact on bond prices. I wonder how would the significance of your results change if you consider adaptive or rational expectations. At least in case of adaptive expectations it should not be difficult to check. You could for instance assume that the inflation report at time $t-1$ is what investors expect and check how much the inflation report at time t differs from the one at $t-1$ and define this as a surprise.**
- 8) In the introduction you start sentence with *and*, it does not look good.

To wrap it up, I consider this thesis well written and fully satisfying the standards of master thesis at Charles University.

Question: Comment on point 7.

Ederington, Louis H. and Jae, Ha Lee 1993. "How Markets Process Information: News Releases and Volatility." *Journal of Finance* 48, no. 4

Fleming J. Michael and Remolana Eli 1997. "What Moves the Bond Market?", FRBNY Economic Policy Review

Goldberg, Linda and Leopard Deborah 2003. "What Moves Sovereign Bond Markets? The Effects of Economic News on U.S. and German Yields", *Current Issues in Economics and Finance*, Federal Reserve Bank of New York, volume 9, Number 9

Prag, Jay 1994. "The Response of Interest Rates to Unemployment Rate Announcements: Is there a Natural Rate of Unemployment?" *Journal of Macroeconomics* 16, no. 1

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

CATEGORY	POINTS
<i>Literature</i> (max. 20 points)	10
<i>Methods</i> (max. 30 points)	30
<i>Contribution</i> (max. 30 points)	30
<i>Manuscript Form</i> (max. 20 points)	20
TOTAL POINTS (max. 100 points)	90
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE: Aleš Maršál

DATE OF EVALUATION:

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	1	= excellent	= výborně
61 – 80	2	= good	= velmi dobře
41 – 60	3	= satisfactory	= dobře
0 – 40	4	= fail	= nedoporučuji k obhajobě