

Report on Bachelor / Master Thesis

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

Student:	Jan Marek
Advisor:	PhDr. Boril Šopov, MSc., LL.M.
Title of the thesis:	The Nelson-Siegel Model: Present Application and Alternative Lambda Determination

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

Jan's thesis studies a demanding topic of yield curve modelling. The thesis' structure is logic and, to the overall high quality, follows established structure: introduction, literature review, theory and methodology, results and conclusion. The thesis is written in good and lucid English and fully fulfils all formal requirements. Moreover, the typographical quality is almost flawless.

The thesis uses popular yet still quite an advanced version of the Nelson-Siegel model. This version is formulated into a set of AR models. The introduction opens the topic and even a reader unfamiliar with the topic can understand. The following chapter reviews current literature, related models, and places author's thesis in context and narrows the aim of the thesis. Chapter 3 reviews the theoretical results needed to carry out the upcoming analysis. This chapter, although not presenting any new results, is well structured and with sufficient care for detail it is very lucid and coherent.

Chapter 4 introduced the Nelson-Siegel model. The individual yields of the yield curve are modelled as weighted average of level, slope and curvature factors, where the weights of slope and curvature are conducted by the parameter of interest – Lambda. Most importantly, in this chapter, the author presents his own contribution to the yield curve modelling – review of the Lambda parameter selection and calculation. The parameter Lambda is often set invariant and largely ignored in the literature. Jan chose to compare different method by their forecasting abilities – RMSE of forecasts. I would like to point this out, because it makes this thesis banking practice relevant.

Due to the nature of lambda calculation (by numerical methods rather than by econometrics), the author had to review basics of numerical optimization methods to be able to set up and run the correct optimization problem. Such exercise exceeds the level of bachelor thesis. Needless to say, the whole thesis required a lot of programming time in Ox¹.

Chapter 5 presents the estimation results. The results are in line with general literature, which further confirms validity of this approach. Jan concludes that his refined approach performs better in more volatile markets.

To conclude, this thesis uses advanced econometrics techniques and relevant range of literature. It is written clearly and it is easy to read, though some occasional typos are present. Overall, it exceeds common level of bachelor theses.

Based on the above mentioned and based on the awarded points, I suggest grade 1.

¹ Object-oriented econometric programming language.

Report on Bachelor / Master Thesis

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

Student:	Jan Marek
Advisor:	PhDr. Boril Šopov, MSc., LL.M.
Title of the thesis:	The Nelson-Siegel Model: Present Application and Alternative Lambda Determination

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

CATEGORY	POINTS
Literature (max. 20 points)	18
Methods (max. 30 points)	25
Contribution (max. 30 points)	27
Manuscript Form (max. 20 points)	16
TOTAL POINTS (max. 100 points)	86
GRADE (1 – 2 – 3 – 4)	

NAME OF THE REFEREE: Boril Šopov

DATE OF EVALUATION: 9th June 2015



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