Report on Bachelor / Master Thesis

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

Student:	**Bc. Vladimír Bajer**
Advisor:	**Mgr. Magda Pečená, Ph.D.**
Title of the thesis:	**Government Bond Duration: Theory and Evidence**

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

Please provide a short summary of the thesis, your assessment of each of the four key categories, and an overall evaluation and suggested questions for the discussion. The minimum length of the report is 300 words.

Short summary

Vladimír´s Master thesis is one of the examples of industry relevant master thesis. Interest rate risk has been „the" financial topic that gained attention recently. Interest rates has gone through an increased level and volatility period over the least few years - the inflation wave all over the world made the central banks to increase the policy rates to combat the inflation, which had corresponding consequences for the yields (both in terms of the level and volatility). Understanding sensitivity of the financial instruments to interest rate and yield changes (and yield expectations) is crucial for measuring and managing interest rate risk in the banking book, in which government bonds represent vast majority of the portfolios. Asset and liability management (ALM) and/or risk management departments of all financial institutions were challenged by recent development. When several US banks collapsed during spring 2023 with no apparent credit risk problems (e.g. Sillicon Valley Bank), interest rate risk (together with the liquidity risk) became focus of most supervisors both in developed and developing world.

Majority of papers and studies focusing on duration theory – measuring sensitivity of the security to interest rate changes - are dated back to 20th century, but it does not mean the theory is less valid, on contrary. Many risk managers and informed board members use information on (portfolio) duration as primary approximate estimate of their portfolio sensitivity and risk.
And this master thesis provides evidence that this theory holds. Vladimir targeted the research on most developed markets (US and Germany) and our Czech market as well (specifically on sovereign bonds issued by US, German and Czech governments). For these markets/bonds we assume high degree of efficiency and liquidity which means higher probability that the theory has its rationale.

Contribution
This analysis is of high relevance to commercial banks, supervisors & regulatiors and also to academics, who teach the theory of duration. Duration theory was and is nowadays commonly and widely used in the business and financial sector as a feasible tool for measuring interest rate risk. Supervisors and regulators largely rely on this concept (for reference see Standards issued by the Basel Committee on Banking Supervision (2016) or Guidelines issued by the European Banking Authority (2022)). Vladimir searches to verify how precisely this concept operates and what are the sources of inaccuracies or uncertainties. After discussion Vladimir chose most recent available data (2020 – 2023) which gives specific insight into different interest rates and yield levels in the span of the last four dynamic years.

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Methods
To my knowledge, the methods used were adequate to the analysis performed. Vladimir made use of standard econometric analysis with appropriate testing.

Literature
I did not identify any shortcomings in Vladimir´s work with literature, the literature was a nice summary of concepts introduced in past decades and current papers on the application.

Manuscript form
I did not find any shortcomings in the manuscript form, the thesis is logically structured, easy to follow, clear in hypotheses tested, results and their interpretation. The level of (English) language and formulation skills are high.

The results of the Urkund analysis do not indicate significant text similarity with other available sources, all other similarities are well sourced.

The further research directions were already highlighted in the thesis.

Suggested questions for the discussion during the defense
Please describe which (financial) industries benefit from duration theory and what is the context of the application.
Can you think of other inaccuracies – esp. in less developed market – that hinder use of the standard duration theory.

In my overall view, the thesis is very good, fulfills the requirements for master thesis at IES, Faculty of Social Sciences, Charles University, I recommend it for the defense and suggest grade A.

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	25
Methods	*(max. 30 points)*	26
Literature	*(max. 20 points)*	20
Manuscript Form	*(max. 20 points)*	20
TOTAL POINTS	*(max. 100 points)*	**91**
GRADE	**(A – B – C – D – E – F)**	**A**

NAME OF THE REFEREE: Mgr. Magda Pečená

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DATE OF EVALUATION: 2. 9. 2024

Digitally signed (September 2, 2024)

Magda Pečená

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Referee Signature

Please sign the report electronically using one of the following options:
- *Certified electronic signature*
- *Adobe digital signature*
- *Writing „Digitally signed", the date and your name above „Referee Signature"*
- *In any case, your name has to be typed, the signature cannot include a scanned picture of your hand-written signature.*

- *Two examples are here:*

Ladislav Kristoufek
Digitally signed by Ladislav Kristoufek
Date: 2020.08.05 15:14:49 +02'00'
_____
Referee Signature

Digitálně podepsáno (5. 8. 2020):
Ladislav Krištoufek
_____
Referee Signature

Please note that a scan of the report with hand-written signature will not be accepted.

Then submit the report to SIS. There is no need to deliver a signed hard copy of the report. Please delete these instructions before submitting the report.

<u>*EXPLANATION OF CATEGORIES AND SCALE:*</u>

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.*

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.*

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

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.*

<u>*Overall grading:*</u>

TOTAL	GRADE
91 – 100	**A**
81 - 90	**B**
71 - 80	**C**
61 – 70	**D**
51 – 60	**E**
0 – 50	**F**