

Report on Bachelor Thesis

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

Student:	Šimon Repko
Advisor:	Doc. Ing. Tomáš Cahlík, CSc.
Title of the thesis:	Selected Aspects of Negative Interest Rates

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

The bachelor thesis explores the relationship between the interest rates and commodity prices with a special attention given to the recent introduction of negative interest rates. Using monthly time series on 16 different commodities from year 2000 onward, the author confirms established relationship between interest rates and prices of commodities, but finds no specific effect of negative interest rates. While I have some reservations on all the evaluated aspects of the thesis, I believe that overall it fulfills the requirements of bachelor thesis at our institution.

Contribution

The main contribution of the thesis is an inquiry into the effect of the negative rates introduced recently by several central banks. By constructing a regressor which captures the share of countries which domestically face negative interest rates within the world GDP, the author wants to assess any particular effect this easing of monetary policy may have on commodity markets. He finds no statistical evidence to support such claim. In my opinion a secondary contribution lies in a fair summary of the development of negative interest rates and other unconventional tools of monetary policy. Unfortunately, the analytical part of the thesis has certain drawbacks which limit the value added and therefore I only evaluate the contribution as average.

Methods

The thesis employs Vector Error Correction Model to make qualitative implications about the effect of negative interest rates. Application of the methodology is good, the author is able to reasonably argue in favour for using it, utilizes correct tests to evaluate underlying assumptions, and acknowledges the potential limitation of the analysis due to heteroskedastic residuals. The only exception to this is the lag length selection for the model where the details are missing and perhaps stationarity tests of the differenced series. This proves strong skill in independent and rigorous analysis given the student's level of studies.

At the same time, I see severe issues with underlying data and their construction. First, I miss strong argumentation in favour of using the nominal interest rates instead of real interest rates. As the latter is the standard in the literature, one needs to provide good reasons on why deviate from this approach. Relying on real rates might, for example, enlarge the set of countries actually facing negative (real) interest rates. Second, while I admit the data availability is restrictive to the analysis, it is crucial to avoid oversimplification. Using GDP and data at monthly frequency to compute the share of countries with negative interest rates on the world GDP is troublesome, especially as there is only one additional variable (inflation) considered in the analysis. Imposing constant annual GDP growth to monthly observations on such a short sample does not provide much variability. **Additionally, if I understand the construction of the variable correctly (there is no figure or summary statistic), its value should be zero until 2012 when the negative rates first occurred. Author could perhaps elaborate on this during defense.** Moreover, the variability of interest rates themselves is limited as the changes of the policy rates are not that frequent. Last, the description of data construction seems vague at some points. For instance, reader does not learn how the final aggregation of the individual country data is done (simple or weighted averages? What are the weights? Or something completely different?). **Suggestion at the end mentions omitted variables. Which variables would author recommend?**

Given the first two concerns in particular, it is no surprise that the model does not provide any evidence on influence of negative interest rates. I would suggest regime switching model or simply dummy variables capturing presence of negative rates (e.g. by major institutions, such as ECB) could

address the research question better. To sum up, I believe the author made good effort in applying the methodology, but the research would deserve more careful design.

Literature

Literature overview satisfyingly covers related studies and is up to date. What I miss is the discussion on what the implications of negative rates could be in the long run, notion of financial stability, secular stagnation, etc. This could easily substitute unnecessary introduction into IS-LM model or quite substantial description of the terminology.

Manuscript form

Except for the methodological issues, manuscript is where the most significant problems lie. In my opinion, the thesis does not read very well. The direct quotations from different speeches and papers sometimes do not provide value, but rather distract the reader from the content itself. It could be worth to rather interpret than quote. Moreover, occasionally there are several subjects or verbs in the sentences to choose from (see e.g. p. 10) which worsens flow of the text.

The structure could also be improved to be more focused on the main research question. The author mentions it in the beginning, then diverge from it by discussing perhaps too basic theory. Therefore I have the impression that some parts are rather unnecessary while some important and topic related are only touched upon. The discussions on why the relationship between interest rates and commodity prices is expected, why does author focus on nominal rates, or long run consequences of negative interest rates are very shallow for instance.

Some formal issues to be addressed in future work:

- use two font styles maximum. One for the main text, other potentially for figures (refers to the footnote on p. 28),
- equations deserve numbering so that they are easy to refer to,
- your suggested model should have coefficients (p. 29),
- there is no need for double numbering of pages (in both header and footer),
- the abbreviations should be introduced in the brackets after using the full name for the first time, not the other way around. And make sure they **are** introduced in the text (e.g. IRF),
- citations should be consistent, I do not understand why author sometimes uses names or their initials (e.g. p. 24).

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

CATEGORY	POINTS
<i>Contribution</i> (max. 30 points)	18
<i>Methods</i> (max. 30 points)	22
<i>Literature</i> (max. 20 points)	15
<i>Manuscript Form</i> (max. 20 points)	12
TOTAL POINTS (max. 100 points)	67
GRADE (1 – 2 – 3 – 4)	2

NAME OF THE REFEREE: Jan Mareš

DATE OF EVALUATION: 7. 6. 2017

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